GAITHERSBURG UPCOUNTY SENIOR CENTER

SPACE PLANNING STUDY AND ANALYSIS

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ARCHITECTS
06020

01-15-07

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1. EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

GOALS

- Evaluate current building configuration, condition, and utilization.
- Identify Building Code non-compliance issue(s).
- Review current and anticipated (i.e. future 10 years) space usage and needs.
- Evaluate needs/problems identified by Gaithersburg Upcounty Senior Center staff/volunteers/members.
- Develop a plan to maximize use of the existing facility for current and anticipated (i.e. future 10-years') needs.

APPROACH

- Establish a core project team composed of Center operational and facilities staff and design professionals to manage and guide the study.
- Gather information on existing conditions and current needs through field investigations, on-site observations, member and staff surveys, staff interviews, and project team discussions.
- Generate a 10-year-projection based on census data, historical Center participation, staff projections, and industry practices.

CONCLUSIONS

- The "existing conditions survey" indicates that the Center has the following Building Code and program deficiencies:

- Dead end corridors more than 20 feet in length.
- Poorly located and non-ADA-compliant restrooms resulting in inadequate member access and limited staff monitoring.
- Based on standard architectural space planning practices, the present circulation routing is disorienting. Predictability of a space is essential to reduce confusion. Special consideration must be given to developing patterns of circulation that facilitate way-finding.
- The existing administration/member services area is undersized and lacks dedicated space for members and staff to function properly.
- The activity areas are sufficient in number but lack adequate space to house the scheduled classes resulting in participants spilling out to adjacent areas/rooms and disrupting those activities.

- The “current needs assessment” indicates that the Center has the following shortcomings to properly address current member and staff needs:
  - Daily member participation averages 104 active members per day or over 27,000 visits per year. Approximately 38% (or 40 members) are city residents and approximately 62% (or 64 members) are non-city residents.
  - General office space is inadequately sized to allow visitor consultations.
  - There is no wellness office to meet current members’ medical needs.
  - A staff conference room is needed for staff meetings and training so as to keep these activities from intruding on member service spaces.
  - Additional storage is needed for all activities as the “storage spaces” have been converted to usable/activity space.
  - Overflow conditions, waiting lists, and scheduling conflicts can be reduced if the dining room, billiards room, lecture/meeting room, multipurpose room, computer room, and arts and crafts room are increased in size.
  - Because the card room occupies space in a corridor, a dedicated card room should be added.
  - Additionally, the computers occupy a corridor and should have their own room.

- The ”projected needs assessment” indicates that the facility may experience at least a 100% increase over the next 10 years.
  - The projected average daily member participation is expected to increase to approximately 200 active members per day or 52,000 visits per year.
  - To accommodate the increased membership, additional staff and their corresponding space will be required, including additional business office space, an additional counseling room, additional exam rooms, additional program assistant rooms, and a volunteer workroom. The staff conference room will require enlargement in order to accommodate the additional staff.
  - The restroom facilities must increase in number to meet Code.
  - A family toilet room should be added to accommodate multi-generational needs.
  - An additional food service line and updated kitchen facility are needed to serve the increase in members and to meet Code requirements.
  - Additional storage will be needed.
  - The dining room, billiards room, lecture/meeting room, computer room, and arts and crafts room will all need to be increased in size.
  - A pottery/ceramic room, arts/paints room, library/media room, fitness center, changing/locker rooms, retail/convenience shop, stage area, general classroom, music room, and an outdoor space will be needed for the additional programs planned to service the increased membership.

RECOMMENDATIONS

- The study clearly indicates that the current facility cannot fully support the current needs of the Senior Center and, most certainly, cannot meet the projected needs over the next 10-year period.
- The proposed improvement plan is two-fold:

1. Take advantage of two small areas for additions and reconfigure the existing space to maximize its use;
2. Implement a transportation program to utilize off-site facilities to meet the expanding needs of the membership. (A transportation plan is not within the scope of this study.)

- The following modifications to the existing facility are proposed (please refer to the Existing, Expansion, and Proposed Drawings in the Section 6, References, of this document):
  - Enclose and incorporate two small areas, approximately 600 square feet each, outside the existing building to add approximately 1,200 square feet (refer to Expansion drawing in Section 6).
  - Move the administration area into the long narrow portion of the existing dining room.
  - Convert the full-service kitchen into a serving kitchen.
  - Move the expanded restrooms into the current area of the existing dining room and kitchen (refer to Drawing A-3, Proposed, in Section 6).
  - Move the arts and crafts room into the remaining administration space, add a computer room, and expand the lecture/meeting room into the available corridor space (refer to Proposed drawing in Section 6).
  - Move the dining room into the space vacated by the multipurpose room, arts and crafts and the existing dead-end corridor (refer to Proposed drawing in Section 6).
- The extent of the proposed modifications is such that the Center would have to close during renovation. Use/occupancy during renovation is not feasible because the Senior Center cannot provide adequate services to the members in only a portion of the existing building. This requires that the Senior Center operate from an off-site location during the renovations.

ALTERNATE CONSIDERATION

- If membership is limited to City residents only (currently, about 40 members per day; approximately 38% of total members) and there is a 100% increase in membership over the next 10 years, it appears that the existing facility could operate with less strain on its current resources and use the 10-year time frame to build a new facility. The impact on the community of, essentially, excluding more than 60% of its current members for this length of time is beyond the scope of this study.

COST ESTIMATE

- 1,200 sq.ft. Additions x $300/sq.ft. = $360,000
  11,400 sq.ft. Renovations x $195/sq.ft. = $2,223,000
  TOTAL $2,583,000

GAITHERSBURG UPCOUNTY SENIOR CENTER
SPACE ANALYSIS SUMMARY

11/30/2006

EXISTING		CURRENT NEED		PROJECTED NEED		PROPOSED IMPROVEMENTS		
		BASED ON 100 ACTIVE MEMBERS DAILY		BASED ON 200 ACTIVE MEMBERS DAILY		BASED ON 100 ACTIVE MEMBERS DAILY		CHANGE
ADMINISTRATION/MEMBER SERVICES	SF	ADMINISTRATION/MEMBER SERVICES	S.F.	ADMINISTRATION/MEMBER SERVICES	S.F.	ADMINISTRATION/MEMBER SERVICES	S.F.	SF
RECEPTION	75	RECEPTION	80	RECEPTION	80	RECEPTION	80	+5
BUSINESS OFFICE	300	BUSINESS OFFICE	350	BUSINESS OFFICE	450	BUSINESS OFFICE	100	-200
DIRECTOR	165	DIRECTOR	165	DIRECTOR	165	DIRECTOR	165	0
PROG. SUPERVISOR	95	PROG. SUPERVISOR	110	PROG. SUPERVISOR	110	PROG. SUPERVISOR	100	+5
REC. ASSISTANT	92	REC. ASSISTANT	110	REC. ASSISTANT	110	REC. ASSISTANT	100	+8
COUNSELING	92	COUNSELING	110	COUNSELING	110	COUNSELING	100	+8
		WELLNESS OFFICE	120	WELLNESS OFFICE	120			
		STAFF CONFERENCE ROOM	180	STAFF CONFERENCE ROOM	240			
		STAFF TOILET	60	STAFF TOILET	60			
		STORAGE	100	STORAGE	100	STORAGE	33	+33
				COUNSELING	110			
				EXAM ROOM	110			
				EXAM ROOM	110			
				PROGRAM ASSISTANT	110			
				PROGRAM ASSISTANT	110			
				VOLUNTEER OFFICE/WORKROOM	110			
SUB-TOTAL	819	SUB-TOTAL	1385	SUB-TOTAL	2205	SUB-TOTAL	678	-141
COMMON/SERVICE SPACES		COMMON/SERVICE SPACES		COMMON/SERVICE SPACES		COMMON/SERVICE SPACES		
VESTIBULE	68	VESTIBULE	100	VESTIBULE	100	VESTIBULE	184	+116
LOBBY	715	LOBBY	400	LOBBY	400	LOBBY	592	-123
COATS	122	COATS	60	COATS	60	COATS	60	-62
MEN'S ROOM	146	MEN'S ROOM	200	MEN'S ROOM	300	MEN'S ROOM	206	+60
WOMEN'S ROOM	132	WOMEN'S ROOM	200	WOMEN'S ROOM	300	WOMEN'S ROOM	206	+74
KITCHEN	933	KITCHEN	800	KITCHEN	800	KITCHEN	794	-139
STORAGE	142	STORAGE	400	STORAGE	800	STORAGE	400	+258
CUSTODIAN	100	CUSTODIAN	100	CUSTODIAN	100	CUSTODIAN	83	-17
				FAMILY TOILET	60			
				FOOD SERVICE LINE	300			
SUB-TOTAL	2358	SUB-TOTAL	2260	SUB-TOTAL	3220	SUB-TOTAL	2525	+167
ACTIVITY SPACES		ACTIVITY SPACES		ACTIVITY SPACES		ACTIVITY SPACES		
FOUNDERS ROOM - DINING	2007	FOUNDERS ROOM - DINING	2400	FOUNDERS ROOM - DINING	4000	FOUNDERS ROOM - DINING	2107	+100
BILLIARDS ROOM	380	BILLIARDS ROOM	400	BILLIARDS ROOM	1000	BILLIARDS ROOM	400	+20
		CARD ROOM	240	CARD ROOM	240	CARD ROOM	240	+240
LECTURE/MEETING ROOM	404	LECTURE/MEETING ROOM	600	LECTURE/MEETING ROOM	800	LECTURE/MEETING ROOM	566	+162
ALICE SCHULTZ ROOM - MULTIPURPOSE	1193	ALICE SCHULTZ ROOM - MULTIPURPOSE	1800	ALICE SCHULTZ ROOM - MULTIPURPOSE	1800	ALICE SCHULTZ ROOM - MULTIPURPOSE	1306	+113
COMPUTER ROOM	140	COMPUTER ROOM	300	COMPUTER ROOM	800	COMPUTER ROOM	300	+160
ARTS/CRAFTS ROOM	238	ARTS/CRAFTS ROOM	400	ARTS/CRAFTS ROOM	400	ARTS/CRAFTS ROOM	400	+162
ART STORAGE	60	ART STORAGE	200	ART STORAGE	200	ART STORAGE	200	+140
LIBRARY STACK AREA	60	LIBRARY STACK AREA	60	LIBRARY / MEDIA CENTER	400	LIBRARY / MEDIA CENTER	60	0
				FITNESS CENTER	1500			
				MEN'S LOCKER/CHANGING ROOM	300			
				WOMEN'S LOCKER/CHANGING ROOM	300			
				ARTS / PAINTS ROOM	400			
				ARTS / PAINTS ROOM STORAGE	100			
				ARTS / CRAFTS ROOM	400			
				ARTS / CRAFTS ROOM STORAGE	100			
				RETAIL / CONVENIENCE SHOP	200			
				STAGE AREA	400			
				GENERAL CLASSROOM	800			
				MUSIC ROOM	800			
				OUTDOOR ACTIVITIES AT 2500 SQ. FT.				
SUB-TOTAL	4482	SUB-TOTAL	6400	SUB-TOTAL	14940	SUB-TOTAL	5579	+1097
TOTAL NET SQ. FT.	7659	TOTAL NET SQ. FT.	10045	TOTAL NET SQ. FT.	20365	TOTAL NET SQ. FT.	8782	+1123
Grossing Factor - 67% 67% grossing is well within industry standards	3772	Grossing Factor - 67%	4948	Grossing Factor - 67%	10031	Grossing Factor - 67%	3275	
TOTAL GROSS SQ. FT.	11431	TOTAL GROSS SQ. FT.	14993	TOTAL GROSS SQ. FT.	30396	TOTAL GROSS SQ. FT.	12057	+626

2. BACKGROUND

BACKGROUND

In 1990 the Maryland Housing Opportunities Commission, Montgomery County Department of Housing and Community Affairs and the City of Gaithersburg formed a partnership to establish the Upcounty Senior Center.

The Gaithersburg Upcounty Senior Center has occupied its present location for over 10 years. It resides on the first floor of a converted multistory hotel and shares the site with the Diamond Square Apartments. The current facility is constricted by the housing complex and vehicular circulation/parking areas. The City of Gaithersburg has maximized the use of the space as limited by the present configuration.

The objective of the study is to analyze the use of the existing space, project expected space use within the next 10 years, and analyze the existing space for possible reconfiguration and/or expansion to improve and maximize use of the facility. The proposed reconfiguration takes into consideration scheduling and management improvements to maximize the use of the facility within its existing walls.

The analysis is based on information gathered from industry standards, code requirements, staff and member surveys, interviews, demographics, site usage data, round table discussions, visual verification and available building documentation.

For purposes of clarification, the following terms are used as defined below:

"existing" – a current structure, need, or situation that is presently used, occupied, felt, or observed;

"expansion" – identifies an area to be incorporated into an existing structure

"proposed" – a suggested or recommended change in or to an existing space or situation

"current need" – A present program, use, function or activity that is currently under utilizing, adequately housed in or exceeds the existing available space. This need is limited to present programs and staffing services being provided to the existing membership.

"projected need" – A program, use, function or activity that is expected to decrease, increase or remain unchanged over the next 10 years. This need is open to existing or new programs and staff services needed to properly serve the projected membership.

"wants" – A program, use, function or activity that the steering committee believes will enhance the member experience, increase participation or expand membership.

"net square feet" – The area of a floor that is suitable for occupancy. Net square footage is programmable space assigned to a particular function.

"gross square feet" – The total area in a building for all floors to the outer surface of exterior walls. Gross square footage is the total space enclosed by the exterior walls of a structure and incorporates all areas, including storage. Gross square feet also includes major vertical penetration areas greater than two square feet, such as shafts, elevators, stairwells, or atrium space.

"grossing factor" – The optimum grossing area of a building is the area required to support the net space. The grossing factor allows for typical building components (i.e. mechanical, electrical, plumbing, etc.) as required by the Building Code.

3. EXISTING CONDITIONS

EXISTING CONDITIONS

The existing conditions were analyzed through site visits by Structural, Mechanical, Electrical Engineers and Architects, staff interviews, and review of available documentation.

Site Analysis

The site is fully developed and surrounded by commercial uses. Based on available documentation, the building site appears to extend from setback to setback. A Civil Engineering site survey is not included in the scope of this study.

The facility is in good condition with fairly easy access for both bus traffic and member/staff vehicles. The site is shared with apartment units and the shared parking generally functions well with the differing schedules of the two user groups (apartment dwellers and Center members/staff). However, there is no excess of parking and there are shortages during some Senior Center functions.

Possible areas of expansion, without major disruption to vehicular and pedestrian access and parking, are limited to a small section on each side of the existing lobby. This area could net approximately 1200 square feet of usable space to the facility. However, the cost per square foot for such a small increase in usable space is a major consideration.

The Center's staff and members prefer the existing vehicular access. Access and staging for bus pick-up and drop-off is acceptable. There is no weather cover nor are there handrails for member use during loading and unloading.

Structural Analysis

SYNOPSIS:

The finding of the Structural Analysis is that the existing slab-on-grade in the proposed renovation area is satisfactory for a 100 psf live load, and would accommodate the proposed renovation. The current building code is: 2003 International Building Code.

DETAILS:

The existing building drawings, dated October 24, 1983 and June 13, 1995, were reviewed by the Structural Engineer. No internal inspection or material testing of structural members was performed. The original structure was designed for hotel use and, in 1995, it was partially renovated for use as a Senior Center.
The existing structure is five (5) stories and is, primarily, a concrete structure. The existing roof and elevated floor construction are a concrete flat slab supported by concrete columns and a spread footing foundation. The original entrance canopy is a steel-framed structure. The 1995

addition and renovation included a single-story addition and enclosing the original entrance with walls. The structure for the addition is a metal roof deck on steel joists supported by interior beam and columns and exterior 8" load-bearing CMU walls.

The second floor structure above the proposed renovation area is a 9"-thick flat slab supported by 12"x24"-to-24"x24" concrete columns. The single-story roof structure around the front entrance is a 1½" metal roof deck supported by 20" deep steel joists, 18" deep steel beams, and 12" steel columns. The exterior walls consist of brick veneer or dryvit backed by a cold-formed metal stud. The slab-on-grade is a 4"-thick concrete slab. The exterior foundation walls consist of CMU supported by a continuous spread footing. Elevator shaft walls are non-load bearing CMU walls. The canopy structure was later enclosed by masonry walls during 1995 renovation.

Structural notes on the drawings dated October 24, 1983 and June 13, 1995, indicate the following:

Existing design live loads:

Public space:	100 psf
Hotel rooms:	40 psf + 20 psf for partition
Roof:	30 psf + snow drift

Standards:

Foundation: Allowable soil bearing pressure	=	2,000 psf. for original building and 3,000 psf for the 1995 addition.
Concrete: 28 day compressive strength	=	3,000 psi. for original building and 3,500 psi for 1995 addition.

Reinforcement	-	ASTM A615, Grade 60.
Structural Steel	-	ASTM A36 for all steel except the following
Steel Tubes	-	ASTM A500, Grade B for

New use design live loads:

Offices:	60 psf + 20 psf for partition
Public Rooms & Corridor:	100 psf

Architectural Analysis

The existing Senior Center program activities are concentrated between 8:30 AM to 2:00 PM. Very little member use extends beyond these hours. This limitation is primarily set by available transportation schedules. Extended transportation hours may increase the attendance but that increase is limited by the daily member routines. Off-hours use is presently extended through rentals to non-members for receptions and meetings.

The existing floor plan configuration limits observation and communication between members and staff, hindering access control and member supervision.

An outdoor space is available for use by members and residential occupants. Its remote location and mixed use is a deterrent for member use. Staff monitoring is nearly impossible as it is located at the far side of the building footprint with the members having to travel around the residence for access.

EXISTING LOBBY AREA

EXISTING FOUNDERS (DINING) ROOM

Based on the drawings and verification provided by City staff, the lobby, the dining room, and the kitchen are remnants of the original hotel. All activities, including the activity rooms, are focused in these areas. The only windows in the Senior Center are across the front of the building in the lobby, the front office, and the dining room. As a result, the rest of the activity spaces are windowless and have insufficient and inappropriate lighting. The lack of appropriate colors and finishes make these spaces feel small, closed-in, and unappealing.

EXISTING FLOOR PLAN *

* Refer to Page A-1 in Section 6, References

EXISTING DEAD END HALL

The overall space plan is very disorienting and does not follow architectural space planning practices. From this perspective, traveling from one activity area to another is much more of a way-finding exercise than a pleasant opportunity to visit with friends. The hallways are long and narrow, ultimately resulting in some dead end corridors, which is a Code violation. Predictability of a space is essential to reduce confusion. Special consideration must be given to developing patterns of circulation that facilitate way-finding.

EXISTING WOMEN'S RESTROOM

EXISTING MEN'S RESTROOM

The most evident shortcomings are the configuration, location, and access of the toilet rooms. Finding the toilet rooms is difficult. They are out of the way and too remote from the main activity spaces and control. The room layouts do not comply with the ADA requirements, and, certainly are not aging-friendly.

One of the overall shortcomings of the existing layout is that there is very little sense of activity when you enter. The physical activities are beyond view from the lobby. To enhance the image of the Center, the more physical and creative activities should be closer to the entrance to heighten a visitor's interest.

The existing furniture, finishes, and functional components of daily activity, such as door hardware, plumbing fixtures and trim, and folding partitions, are not age appropriate.

The analysis addresses the existing conditions of the Senior Center and identifies deficiencies that affect the overall quality, and safety, of the visitor's experience at the Center. Of equal importance is how these deficiencies hinder the staff from successfully operating the facility to their greatest potential.

The reception/front office area is strategically located to greet visitors as they enter the center. But once a visitor has left the lobby or is no longer in direct view in the dining room, the staff has lost their ability to easily monitor the activities and daily operations of the Center. The majority of the staff operate in windowless offices or rooms. As it affects the quality of the experience for the visitors to the Center, it also impacts the quality and efficiency of the work place. In reconfiguring the Center, the quality of the staff workplace should be considered, as well as the overall layout of the Center to improve control and awareness of the day-to-day operations.

Code Analysis

Structure Classification: The existing facility is assumed to be a separated, mixed-use building with A-3 and R-2 occupancy classifications. The assembly areas are assumed to be separated from the residential areas by 2-hour fire barrier walls and horizontal assemblies in accordance with Table 302.3.2 (refer to Page B-1 in Section 6, References, for this 2003 International Building Code Table).

Construction Type: The existing type of construction is assumed to be IIB, fully sprinklered. This allows three (3) stories and a 28,500 square foot building area per floor per Table 503 (refer to Page B-2 in Section 6, References, for this 2003 International Building Code Table). The existing Senior Center is one (1) story and approximately 11,500 square feet. Therefore, the Senior Center is in compliance with the assumed construction type, area, and height restrictions.

Fire Rating: The fire rating requirements for building elements is 0 hours for structural frame, bearing walls, nonbearing walls, and partitions; floor construction and roof construction are per Table 601 (refer to Page B-3 in Section 6, References, for this 2003 International Building Code Table).

The only building on-site, the structure is more than 30 feet away from any other structure. There are no fire-resistance rating requirements for exterior walls based on fire separation distance per Table 602 (refer to Page B-3 in Section 6, References, for this 2003 International Building Code Table).

A-3 occupancies require the finishes in exit ways to be Class B minimum and finishes in rooms and enclosed spaces shall be Class C, minimum, per Table 803.5 (refer to Page B-4 in Section 6, References, for this 2003 International Building Code Table).

The existing design occupancy load is calculated per Table 1004.1.2 (refer to Page B-5 in Section 6, References, for this 2003 International Building Code Table) and presented in the following table:

AREA	SF	OCCUPANTS
Business	**100 sf Gross**	
Offices/Lobby/Vestibule	1602	17
Kitchen	**200 sf Gross**	
Kitchen	933	5
Storage	**300 sf Gross**	
Storage	424	2
Assembly without Fixed Seats	**7 sf Net**	
Dining	2007	287
Multipurpose Room	1193	170
Lecture	404	58
Assembly Unconcentrated	**15 sf Net**	
Billiards	568	38
Class Room Area	**20 sf net**	
Computer	140	7
Arts & Crafts	238	12
Total		**579**

Structures with design occupancies between 501 and 1000 are required to have a minimum of three (3) exits. The facility is in compliance.

Spaces with design occupancy loads in excess of 50 are required to have two (2) exits per Table 1014.1 (refer to Page B-6 in Section 6, References, for this 2003 International Building Code Table).

The maximum exit access travel distance for a fully sprinklered A-3 occupancy is 250 feet per Table 1015.1 (refer to Page B-7 in Section 6, References, for this 2003 International Building Code Table). The Senior Center is in compliance.

Corridor fire-resistance rating is 0 hours.

Dead end corridor can be no more than 20 feet. As an example, the length of the hallway leading from the main corridor up to the doors at the end, past the existing Arts & Crafts Room, is more than 36 feet. The existing Senior Center is not Code-compliant.

The minimum corridor width is 0.15 inches times the occupant load for that corridor or 44 inches; whichever is more, per Table 1005.1 (refer to Page B-8 in Section 6, References, for this 2003 International Building Code Table).

Mechanical Analysis

SYNOPSIS:

1. The existing rooftop air handling units are suitable for their present use although control is limited.
2. The existing sanitary service and interior mains are adequate for their present use and could be reused, however, new ADA-compliant fixtures and trim are required.
3. The existing water heater and storage tanks are in good condition; are adequate for their present use, and could be reused.
4. The existing main electrical switchboard and rack-mounted disconnect are suitable for their present use and could be reused. The remaining branch circuit panel boards must be evaluated as to whether they have the capacity to serve additional equipment. Most of the existing electrical equipment is over 20 years old and should probably be replaced. The existing panel boards marked "EMERGENCY" are not an emergency power source. A generator would be required to feed the emergency panels to be in conformance with the National Electrical Code.
5. The existing lighting does not meet current lighting standards and is not energy-saving.
6. The existing fire alarm panel needs to be replaced with a new audio/visual digital addressable system to meet new code and ADA requirements.

DETAILS:

The building is currently heated and cooled by four (4) natural gas-fired rooftop air handling units. As of the time of this study, Rooftop Unit #1 was the oldest and was a Carrier Unit that appears to have been installed during the original building construction in 1985. The nameplate data on Rooftop Unit #1 was not legible, however, the model number written on the side of the unit indicates that the it is a nominal four-ton unit. It is our understanding that the unit has recently been replaced. According to the manual, rooftop units #2, #3 and #4 were installed in 2005. Rooftop unit #2 is a nominal 12½-ton standout efficiency unit that serves the multi-purpose room. Existing rooftop units #3 and #4 are each nominal 17½-ton standard efficiency units with optional downflow economizer and oversized motor. Rooftop unit #3 serves the existing Dining and Lounge Area. Rooftop unit #4 serves the existing lobby, library, and support offices. It is understood that rooftop unit #1 was replace Summer 2006. Given the age of the rooftop units, it is possible that they may be re-used. However, since the units are constant volume zoning, control is limited.

The existing Entry Hall and Reception Area are served by five "thru-wall" packaged heat pumps that were installed during the 1995 modifications. These units are at or near the end of their useful life expectancy.

There is a condensing unit on the roof that appears to be original to the building and is not in operation. There is an additional condensing unit located on the North side of the building at grade, that appears to be original to building. The condensing unit appears to serve the ducted fan coil unit above the electric room ceiling. These units are at or near the end of their useful life expectancy.

A Gibson two-ton heat pump is located on the roof and appears to serve a split system in the office area outside of the Senior Center. This unit does not serve the Senior Center.

The automatic temperature controls for the building consist of a Trane programmable thermostat associated with each of the three Trane rooftop units. These units will probably continue to function adequately. There is no reason to replace them until they fail or installation of an upgraded system is desired.

There are four (4) exhaust fans located on the roof. They appear to be the original exhaust fans under the original building construction in 1984. One (1) of the fans was not operating at the time of the site visit.

Plumbing

The existing sanitary service and interior mains would be reused. The existing toilet rooms, renovated in August 1990, have one (1) ADA-compliant water closet, as required. The existing water service is located in the pump room. The service is a 6" service with duplex pumps used to boost the pressure for the existing residences on the upper floor. The domestic water distribution within the Senior Center area would be reused to the extent possible. The toilet rooms would be provided with new ADA-compliant fixtures and trim at the new location.

The existing domestic water heater is located in the water heater room. The water heater is an A.O. Smith Duramax Model DW1210-5122, natural gas-fired, with two (2) hot water storage tanks. The tanks and water indicated a manufactured date of 2004. As a result, the water heater and storage tanks are in new and good condition. The existing domestic water system appears to serve the entire building.

Kitchen

The existing kitchen is original to the building. A new grease recovery unit was installed in 1995. The existing hood and fixtures may need to be replaced if the kitchen is to be renovated. The majority of the equipment is nearing or has passed the end of its useful life.

Sprinkler System

The existing wet-pipe fire suppression sprinkler system and service are located in the existing pump room. The fire service appears to serve the entire facility. The system has a fire pump and jockey pump. Any modification to the building will require modification to the sprinkler system.

Electrical Analysis

Power Distribution

The Senior Center is provided with an underground electric service from a PEPCO pad-mounted transformer to a 1600 amp, 480/277 V fusible main switchboard. There are five (5) main disconnects in the switchboard and one (1) additional main disconnect installed on a rack adjacent to the switchboard. A 225 KVA dry-type transformer provides power for 120/208-volt loads on the first floor. The electric room contains many 120/208V and 277/480V panel boards feeding lighting and equipment loads throughout the building.

The existing main switchboard and rack-mounted disconnect could be reused. The remaining branch circuit panel boards should be evaluated as to whether they have the capacity to serve any additional equipment provided under the renovation. Most of the existing electrical

equipment appears to be original building equipment and is over 20 years old and may be approaching the end of its useful life and possibly needs to be replaced. All mechanical equipment will continue to be rated for 277/480 volts.

The existing panel boards marked “EMERGENCY” are not emergency since there is no emergency power source. They are connected ahead of the mains, which is no longer code recognized as an emergency power source. A generator would be required to feed the emergency panels to be in conformance with the National Electrical Code.

Emergency egress lighting and fire alarm system are provided with battery back-up.

A new emergency generator is required. It will power the emergency lighting together, possibly, with the elevator and fire pump. Also, the existing “emergency” panels will need to be supplied from the generator.

Lighting

Existing lighting consists of recessed fluorescent lay-in fixtures and recessed incandescent down lights. Most incandescent fixtures should be replaced. New fixtures should feature energy saving electronic ballasts and T5 or T8 lamps. At present, emergency lighting is not provided nor is there battery back-up incorporated into lighting fixtures or wall packs.

Fire Alarm System

The existing fire alarm panel is an antiquated Simplex 4002 system and needs to be replaced with a new audio/visual digital addressable system to meet new code and ADA requirements. All floors above the first floor will remain unchanged and reconnected to the new fire alarm system.

4. SPACE ANALYSIS

SPACE ANALYSIS

The analysis of space usage was based on information gathered though site observations, demographics, facilities and operations staff input, member and staff surveys, and design team input. Twenty-seven (27) member surveys were returned with comments and 68 pages of program needs' comments were generated. All comments were taken into consideration for this analysis.

Existing Spaces

Senior Center administration and member services are located in a 75 square foot reception area where member needs are addressed. The 300 square feet open space business office is adequate but lacks areas for member privacy while dealing with sensitive issues. The 165 square feet Director's Office is adequately sized. The 92-to-95 square feet offices for the Program Supervisor, Recreation Assistant, and Counseling Office are too small. Additionally, there is no conference room or staff meeting space.

The 715 square feet Lobby is spacious and provides a meeting, lounging, and member transportation staging area. The 122 square feet coatroom is spacious and provides a dedicated yet unsecured area for personal belongings.

The 146 Women's and 132 square feet Men's restroom facilities are not senior-friendly, are very undersized, difficult to find, unsecured and not in compliance with ADA requirements.

The 933 square feet kitchen is adequate to serve the present lunch program. However, the equipment is aging, the layout is inefficient, and it is not up to current standards.

Storage is scattered throughout the facility and very undersized for the programming needs of a facility this size.

EXISTING FOUNDERS / DINING ROOM

The activity spaces are centered on the dining and multipurpose rooms. The 2,007 square feet Founders Room (Dining) is the largest venue in the building and the primary space for revenue generation during off-hours. This space can be sub-divided, however, the configurations do not lend themselves for multiple functions, as it becomes a long narrow space.

The Alice Schultz Room (Multipurpose) is the center for physical activity. This 1,193 sq.ft space is undersized to accommodate the exercise classes. The space can be subdivided into two (2) reasonably-sized and -shaped spaces. The low ceiling, however, is an obstacle for some exercise activities and is visually inappropriate for a space of this size and use. The vinyl flooring is not appropriate for the level of physical activity and dedicated storage is needed to house all the related equipment



EXISTING ALICE SCHULTZ / MULTIPURPOSE ROOM

EXISTING LECTURE / MEETING ROOM

The 404 square feet Lecture/Meeting Room accommodates 20 members in conference style seating and 50 in theater style for presentations. It also provides space for arts and crafts activities when they do not fit in the Arts/Crafts Room.


EXISTING LECTURE / MEETING ROOM


EXISTING BILLIARDS ROOM

The 380 square feet Billiards Room houses two (2) pool tables. When the card tables in this room are in use, they spill out into the corridor, blocking traffic and violating Code.


EXISTING COMPUTER / LIBRARY AREA

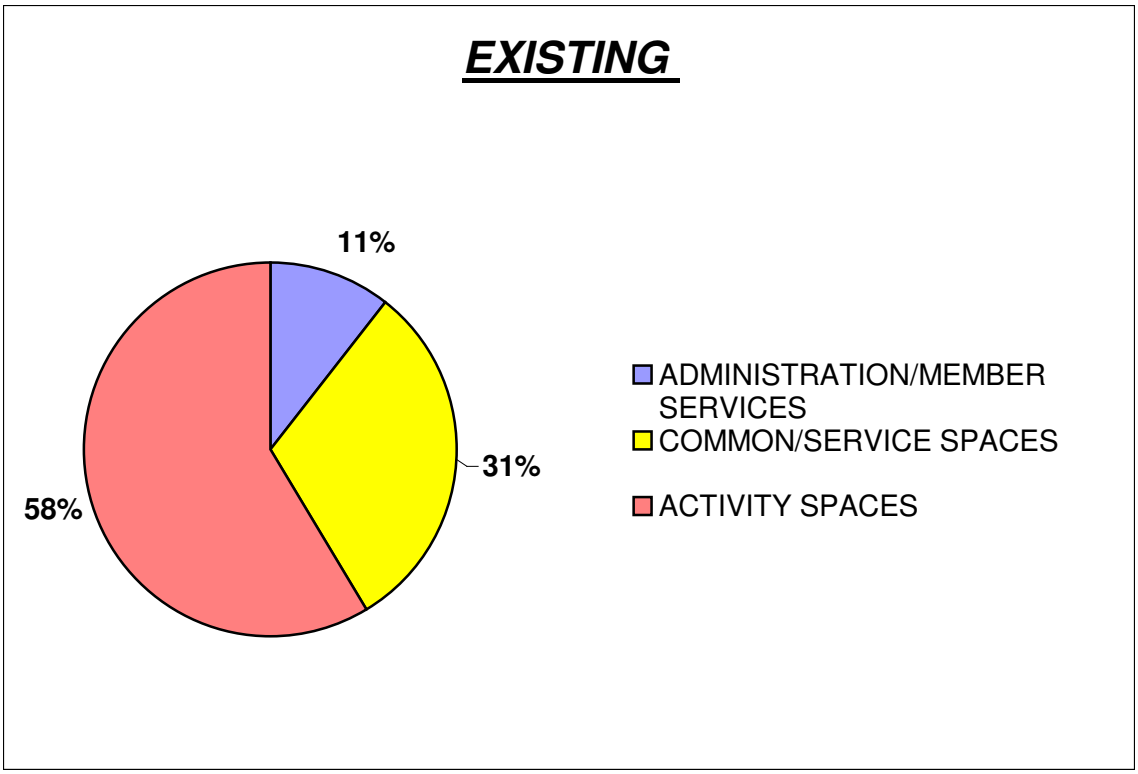
The computer lab occupies a corridor and provides space for six (6) computer stations on tables.

The Library stack area is, also, housed in the corridor.

EXISTING ARTS & CRAFTS

The 238 square feet Arts and Crafts space is set up to be flexible. It is primarily a wet lab for pottery and ceramics with a small storage room directly off this area for limited supplies.

The existing spatial distribution is shown in the chart below:



The existing space allotment is summarized in the Space Analysis and Needs Assessment chart on the following page.

EXISTING SPACE ALLOTMENTS

ADMINISTRATION/MEMBER SERVICES	SF
RECEPTION	75
BUSINESS OFFICE	300
DIRECTOR	165
PROG. SUPERVISOR	95
REC. ASSISTANT	92
COUNSELING	92
SUB-TOTAL	819
COMMON/SERVICE SPACES	
VESTIBULE	68
LOBBY	715
COATS	122
MEN'S ROOM	146
LADIES ROOM	132
KITCHEN	933
STORAGE	142
CUSTODIAN	100
SUB-TOTAL	2358
ACTIVITY SPACES	
FOUNDERS ROOM - DINING	2007
BILLIARDS ROOM	380
LECTURE/MEETING ROOM	404
ALICE SCHULTZ ROOM - MULTIPURPOSE	1193
COMPUTER ROOM	140
ARTS/CRAFTS ROOM	238
ART STORAGE	60
LIBRARY STACK AREA	60
SUB-TOTAL	4482
TOTAL NET SQ. FT.	7659
Grossing Factor - 67%	3772
67% grossing is well within industry standards	
TOTAL GROSS SQ. FT.	11431

Current Needs

The present Administration/Member Services area layout is adequate, however, the individual room sizes for most of the offices does not allow consultation with staff or members and should be increased to 110 square feet each.

The Center needs a 120 square feet wellness office to consult with members and provide elementary medical care and vaccinations. The staff does not have space to meet with non-members, to conduct daily business, or space for staff training without uprooting member functions from their dedicated areas. A 180 square feet staff conference room would seat 10 and satisfy this need.

Separate toilet facilities should be provided for privacy and to limit exposure to unsolicited member contact. A single, 60 square feet unisex toilet would address this need.

All office storage has been given over to general facility use. A 100 square feet dedicated storage space in the office area is needed.

There are a couple of common spaces that have excess capacity. If the facility is reconfigured, some additional square footage could be captured from the Lobby and Coat Room areas.

The restroom facilities do not meet ADA accessibility standards and are undersized for the current membership. The ladies' room, specifically, has long lines during any Senior Center or rental function. Two new restrooms, at 200 square feet each, would alleviate the problem.

The Kitchen is appropriately sized but poorly laid out. The equipment is showing some wear due to its age and needs upgrades to meet current standards. The existing kitchen is currently a full service kitchen. This is not necessary as a fully equipped warming kitchen could serve the needs of an outside catering service who would provide all the food service needs for member and rental functions.

General storage is lacking throughout. Material and equipment are stacked against walls and intrude on usable space. The option of off-site storage was examined and determined to be impractical due to the daily access requirements for most of the stored items. 350 square feet of storage space, distributed around the facility, would be adequate.

Table and chair storage is critical for providing flexible spaces.

The custodial space is adequate for a facility of this size.

The activity areas experience most of the routine space shortages. During lunch and card events, members regularly spill out into the lobby and adjacent corridor from the Founders Room (Dining). A 2400 square feet room would accommodate approximately 160 people seated at tables.

EXISTING ALICE SCHULTZ / MULTIPURPOSE ROOM

The Alice Schultz Room (multipurpose room) routinely experiences similar overflow during exercise classes. An 1800 square feet room would accommodate up to 50 exercise students.

The billiards area lacks “stick space” around the tables and does not have any seating.

EXISTING BILLIARDS AREA

Attendance at lectures exceeds the available space in the Lecture Hall and must be moved out to the Founders Room, which disrupts those activities. A 600 square feet room would provide theater style seating for 85 in unfixed seats.

Arts and crafts activities cannot be housed in the present area due to its small size and must be scheduled around other activities in the Lecture Room. A 400 square foot room would provide more space for up to 20 members at tables. The existing kiln is located in the Arts/ Crafts Room and severely restricts the use of the kiln to off-hours presenting a possible danger to members and staff. A separate 200 square feet kiln/storage area would accommodate the kiln and some storage.

ARTS & CRAFTS IN EXISTING MULTIPURPOSE ROOM

EXISTING COMPUTER / LIBRARY AREA

The Library stack area is sufficient but occupies a corridor and must be relocated.

The computer lab occupies space in an exit corridor and must be relocated. A 300 square feet room would adequately house 8-to-10 computer stations.

EXISTING LECTURE ROOM SIGN

EXISTING EXIT SIGN

Clear accessible corridors with well-defined way-finding devices (i.e. signage) and limited dead ends are essential for maintaining proper orientation and circulation.

Improvements to address ADA access and visual/physical impairments must be a high priority. The current signage does not meet ADA requirements including size, location, and lack of Braille.

EXISTING ARTS & CRAFTS SIGN

The existing finishes are showing wear due to age and daily use. There is, also, evidence of water damage on ceilings and walls. The wall damage must be repaired and ceiling tiles and floor finishes must be replaced.

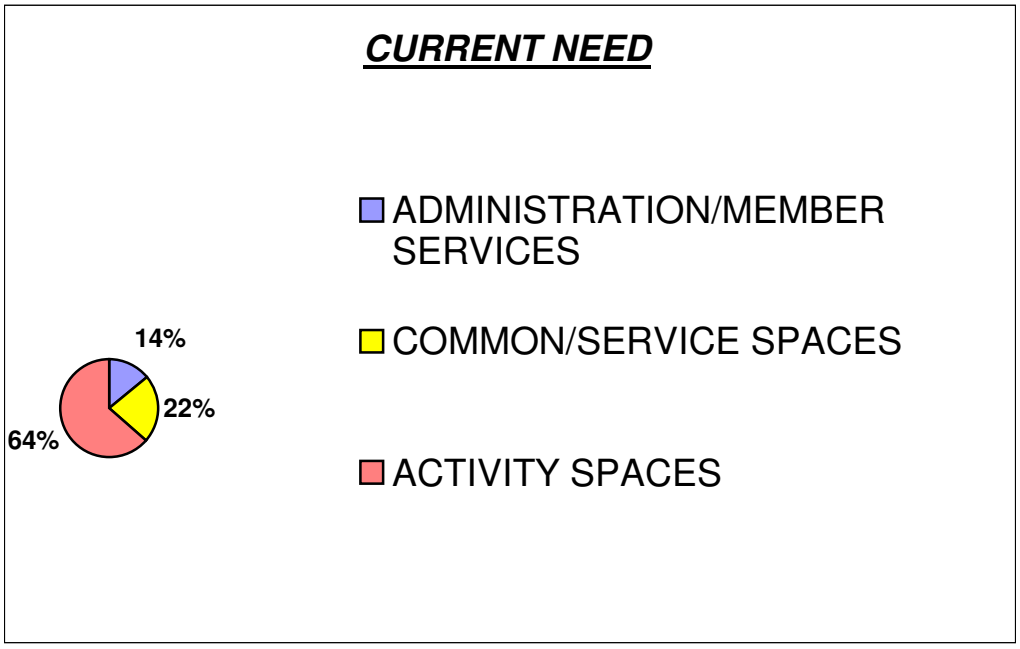

WATER DAMAGE IN HALL

Material, texture, color, and pattern selection are critical in creating a comfortable, pleasing, friendly atmosphere.

Floor finish types should be reviewed. The primary activity areas should have a wood floor and the dining facility needs a dance floor for rentals. Hand-rails for additional support and therapeutic uses are recommended along all corridors. Vertical transitions must be minimized or eliminated. Use of automatic or motion-activated doors; flush valves, and dispensers are recommended.

Sound enhancement devices should be utilized in all presentation areas.

The distribution of the current space allocation and the current needs is shown in the graph chart below and the chart on the following page.



EXISTING		CURRENT NEED	
		BASED ON 100 ACTIVE MEMBERS DAILY	
ADMINISTRATION/MEMBER SERVICES	SF	ADMINISTRATION/MEMBER SERVICES	S.F.
RECEPTION	75	RECEPTION	80
BUSINESS OFFICE	300	BUSINESS OFFICE	350
DIRECTOR	165	DIRECTOR	165
PROG. SUPERVISOR	95	PROG. SUPERVISOR	110
REC. ASSISTANT	92	REC. ASSISTANT	110
COUNSELING	92	COUNSELING	110
		WELLNESS OFFICE	120
		STAFF CONFERENCE ROOM	180
		STAFF TOILET	60
		STORAGE	100
SUB-TOTAL	819	SUB-TOTAL	1385
COMMON/SERVICE SPACES		COMMON/SERVICE SPACES	
VESTIBULE	68	VESTIBULE	100
LOBBY	715	LOBBY	400
COATS	122	COAT ALCOVE	60
MEN'S ROOM	146	MEN'S ROOM	200
LADIES ROOM	132	LADIES ROOM	200
KITCHEN	933	KITCHEN	800
STORAGE	142	STORAGE	400
CUSTODIAN	100	CUSTODIAN	100
SUB-TOTAL	2358	SUB-TOTAL	2260
ACTIVITY SPACES		ACTIVITY SPACES	
FOUNDERS ROOM - DINING	2007	FOUNDERS ROOM - DINING	2400
BILLIARDS ROOM	380	BILLIARDS ROOM	400
		CARD ROOM	240
LECTURE/MEETING ROOM	404	LECTURE/MEETING ROOM	600
ALICE SCHULTZ ROOM - MULTIPURPOSE	1193	ALICE SCHULTZ ROOM - MULTIPURPOSE	1800
COMPUTER ROOM	140	COMPUTER ROOM	300
ARTS/CRAFTS ROOM	238	ARTS/CRAFTS ROOM	400
ART STORAGE	60	ART STORAGE/KILN ROOM	200
LIBRARY STACK AREA	60	LIBRARY STACK AREA	60
SUB-TOTAL	4482	SUB-TOTAL	6400
TOTAL NET SQ. FT.	7659	TOTAL NET SQ. FT.	10045
Grossing Factor - 67%	3772	Grossing Factor - 67%	4948
67% grossing is well within industry standards			
TOTAL GROSS SQ. FT.	11431	TOTAL GROSS SQ. FT.	14993

Projected Needs

The Gaithersburg Upcounty Senior Center currently has approximately 800 registered members. While the total membership has remained fairly constant, they have experienced an increase in daily usage to an average of 104 members per day.

The projected needs' assessment is based on an estimated increase in senior population in Montgomery County and a corresponding increase in membership. This estimate is based on an analysis by the City of Gaithersburg Planning and Code Administration of the latest US Census on projections for the Montgomery County senior population of +106% over a 30-year period.

In addition, historically, we have consistently seen an increase of 35%-to-40% in member usage following a renovation or addition to the facility.

PROJECTED USAGE		
CURRENT DAILY USAGE	=	104 members / day
PROJECTED CENSUS INCREASE	106% over 30 years = + 110	
	= + 37 over 10 years =	141 members / day
PROJECTED FACILITY IMPROVEMENT INCREASE	141 x 35-to-40% = + 49-to-56 =	190-197 members / day

For purposes of this study and ease of use, a 10-year figure of 200 members per day is assumed.

Based on the projected increase in daily usage over the next 10 years, a significant increase in staffing and program space is required to meet the needs of the membership.

Administration and Member Services will need to increase staff over and above the current needs. The business office would need an additional workstation and increase their space by 100 square feet. Two (2) additional program assistants would be needed and require 100 square feet each. Additional volunteers would require a 110 square feet space for preparation and record keeping. An additional 110 square feet counseling office would be needed to accommodate the increased need for private consultations. The wellness office will need two (2) additional exam rooms of 110 square feet each. A 240 square feet staff conference room with seating for 12 would be needed for staff meetings and training.

The additional member usage and occupancy loads would require an increase in the restroom facilities. The toilet rooms would be increased by 100 square feet each. An additional 60 square feet unisex family toilet room would be added to accommodate multi-generational use. The increase in the number of programs would require a corresponding increase in dedicated storage. Overall, the storage areas would be increased by 400 square feet. A 300 square feet food service line would be added in accordance with Health Department requirements.

The Founders Room would increase to 4000 square feet to accommodate 260 members seated at tables. A 400 square feet stage area would be added adjacent to the Founders Room to provide for small productions and presentations for groups of up to 550.

The billiards room would increase to 1000 square feet to provide an additional table and a new ping-pong table. The lecture/meeting room would enlarge to 800 square feet to accommodate seating for 114. The computer room would increase to 800 square feet to a provide space for classroom style training as well as individual use.

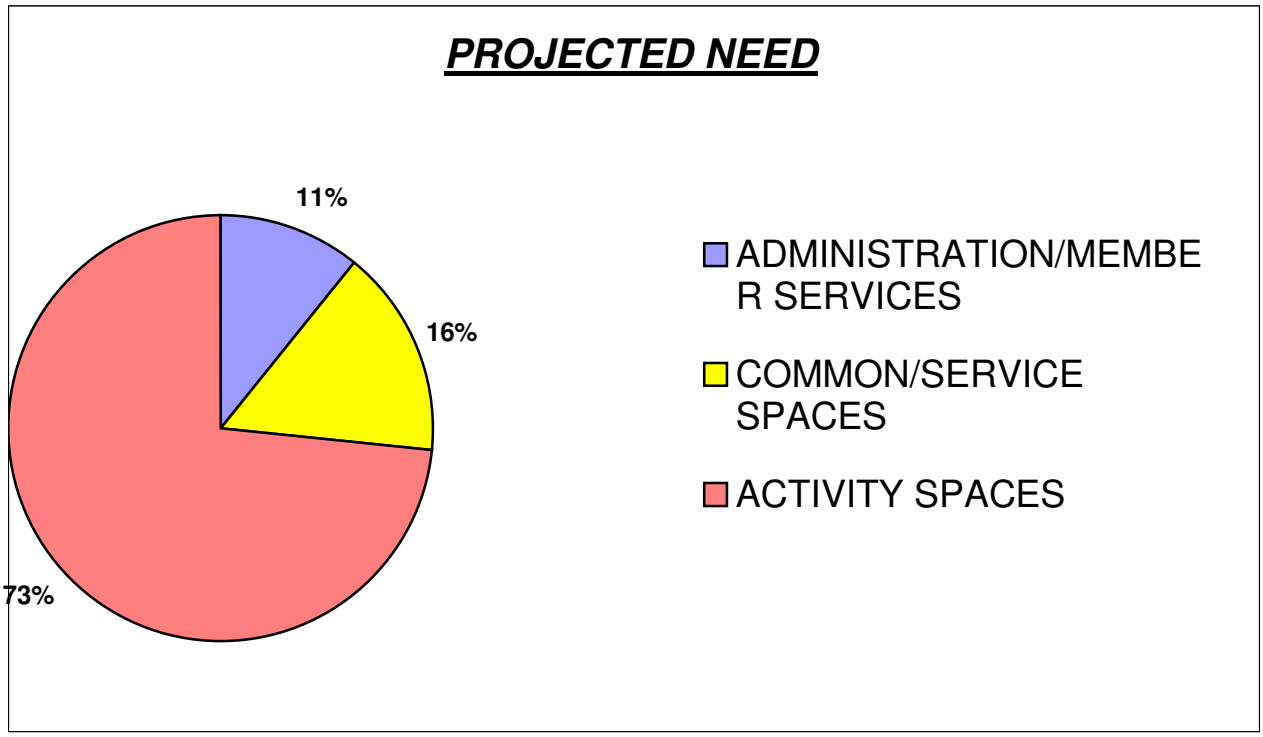
The arts and crafts program would be split into three (3) units to provide the appropriately designed facilities for each function. The crafts area would remain as indicated in the current needs assessment. A 400 square feet pottery/ceramic space with a 200 square feet storage/kiln room at would be added. A 400 square feet painting space with a 100 square feet storage area would be added. An 800 square feet general classroom would be added to provide space for new or expanded programs to meet the projected needs.

The library stack area would be incorporated into a 400 square feet library/media space dedicated to quite use. This space would also be used a lounge area. An 800 square feet music room would be added, with appropriately designed acoustics. A 200 square feet retail/convenience shop would be added. It would feature the members' arts and crafts and provide a limited inventory of articles to address the immediate needs of the members. It is anticipated that the shop will be manned by volunteer members.

Additionally, it is anticipated that the senior population will have a greater need for dedicated exercise equipment and space. A 1500 square feet fitness center would be added. Changing areas, at a total of 300 square feet, would be required to allow members to participate in multiple activities during their day.

An 2500 square feet outdoor space, that is easily accessible to the members, would be added for lawn games, relaxation, and gardening opportunities.

The projected needs are summarized in the graph below and the chart on the following page.



Gaithersburg Upcounty Senior Center – Space Analysis

7/24/2006

EXISTING		CURRENT NEED		PROPOSED IMPROVEMENTS	
		BASED ON 100 ACTIVE MEMBERS DAILY		BASED ON 200 ACTIVE MEMBERS DAILY	
ADMINISTRATION/MEMBER SERVICES	SF	ADMINISTRATION/MEMBER SERVICES	S.F.	ADMINISTRATION/MEMBER SERVICES	S.F.
RECEPTION	75	RECEPTION	80	RECEPTION	80
BUSINESS OFFICE	300	BUSINESS OFFICE	350	BUSINESS OFFICE	100
DIRECTOR	165	DIRECTOR	165	DIRECTOR	165
PROG. SUPERVISOR	95	PROG. SUPERVISOR	110	PROG. SUPERVISOR	100
REC. ASSISTANT	92	REC. ASSISTANT	110	REC. ASSISTANT	100
COUNSELING	92	COUNSELING	110	COUNSELING	100
		WELLNESS OFFICE	120		
		STAFF CONFERENCE ROOM	180		
		STAFF TOILET	60		
		STORAGE	100	STORAGE	33
SUB-TOTAL	819	SUB-TOTAL	1385	SUB-TOTAL	678
COMMON/SERVICE SPACES		COMMON/SERVICE SPACES		COMMON/SERVICE SPACES	
VESTIBULE	68	VESTIBULE	100	VESTIBULE	184
LOBBY	715	LOBBY	400	LOBBY	592
COATS	122	COAT ALCOVE	60	COAT ALCOVE	60
MEN'S ROOM	146	MEN'S ROOM	200	MEN'S ROOM	206
LADIES ROOM	132	LADIES ROOM	200	LADIES ROOM	206
KITCHEN	933	KITCHEN	800	KITCHEN	794
STORAGE	142	STORAGE	400	STORAGE	400
CUSTODIAN	100	CUSTODIAN	100	CUSTODIAN	83
SUB-TOTAL	2358	SUB-TOTAL	2260	SUB-TOTAL	2525
ACTIVITY SPACES		ACTIVITY SPACES		ACTIVITY SPACES	
FOUNDERS ROOM - DINING	2007	FOUNDERS ROOM - DINING	2400	FOUNDERS ROOM - DINING	2107
BILLIARDS ROOM	380	BILLIARDS ROOM	400	BILLIARDS ROOM	400
		CARD ROOM	240	CARD ROOM	240
LECTURE/MEETING ROOM	404	LECTURE/MEETING ROOM	600	LECTURE/MEETING ROOM	566
ALICE SCHULTZ ROOM - MULTIPURPOSE	1193	ALICE SCHULTZ ROOM - MULTIPURPOSE	1800	ALICE SCHULTZ ROOM - MULTIPURPOSE	1306
COMPUTER ROOM	140	COMPUTER ROOM	300	COMPUTER ROOM	300
ARTS/CRAFTS ROOM	238	ARTS/CRAFTS ROOM	400	ARTS/CRAFTS ROOM	400
ART STORAGE	60	ART STORAGE/KILN ROOM	200	ART STORAGE/KILN ROOM	200
LIBRARY STACK AREA	60	LIBRARY STACK AREA	60	LIBRARY/MEDIA CENTER	60
SUB-TOTAL	4482	SUB-TOTAL	6400	SUB-TOTAL	5579
TOTAL NET SQ. FT.	7659	TOTAL NET SQ. FT.	10045	TOTAL NET SQ. FT.	8782
Grossing Factor - 67% 67% grossing is well within industry standards	3772	Grossing Factor - 67%	4948	Grossing Factor - 72%	3275
TOTAL GROSS SQ. FT.	11431	TOTAL GROSS SQ. FT.	14993	TOTAL GROSS SQ. FT.	12057

If use of the facility is limited to City residents only, the projected 10-year figure is only a slight increase over the current usage. However, this would essentially eliminate 60% of the Center's members. The potential impact on the community and their future usage of the Center is beyond the scope of this study.

CITY MEMBERS ONLY		
CURRENT DAILY USAGE		40 members / day
PROJECTED CENSUS INCREASE	106% over 30 years = + 110 = + 42 over 10 years	82 members / day
PROJECTED FACILITY IMPROVEMENT INCREASE	82 x 35-to-40% = 29-to-33	111-115 members / day

5. INTERIM RECOMMENDATIONS

INTERIM RECOMMENDATIONS

ARCHITECTURAL

The existing and current space and needs' analyses clearly indicate that the current needs cannot be met within the existing structure. The solution to the issue is three-fold:

1. Expand the building within the limited space available;
2. Re-organize the space layout to optimize its use; and
3. Incorporate an expanded transportation system to utilize other City facilities within reasonable driving distance.

Any improvements would, also, resolve outstanding Code issues and improve the overall function of the Center.

There are two (2) potential areas for limited expansion adjacent to the existing facility that would not be a major disruption to vehicular and pedestrian access. There is an approximate 626 square feet green space between the lobby, administration, and the parking spaces. Additionally, there are 614 square feet available under the existing canopy and between the canopy and the building. Otherwise, the site is fully developed with no room for a major expansion.

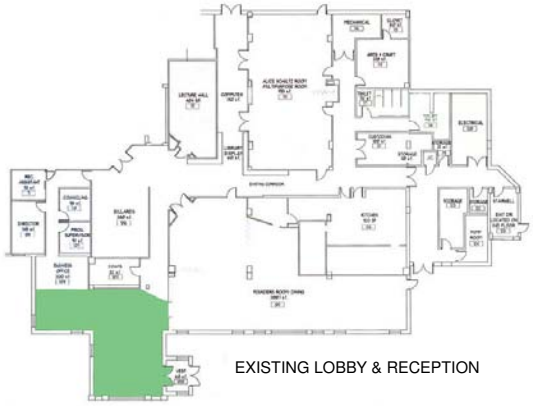
Improving the plan layout is a major undertaking. The restroom facilities must be enlarged and relocated. Dead-end corridors must be eliminated. The dining room is oddly shaped with limited flexible use. The multi-purpose room is limited in height and the kitchen is outdated. The lobby and administration area could be reconfigured to gain usable space. This, coupled with the minor expansion areas, would provide space to make some improvements. (Refer to Section 6, References, for Existing, Expansion, and Proposed Floor Plans.

The existing administration area would be slightly downsized and moved to the long narrow portion of the Founders Room thus freeing up area for activity uses.

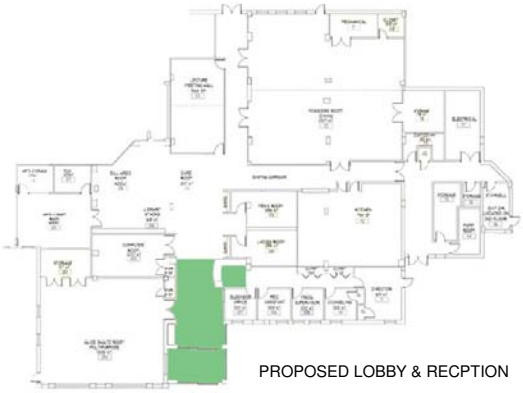
EXISTING OFFICES

PROPOSED OFFICES

The building entry would be moved to the expansion area under the canopy. This would centralize the circulation route, reduce the extent of corridor space, and free up the two-story lobby area for activity uses.



EXISTING LOBBY & RECEPTION



PROPOSED LOBBY & RECPTION

The kitchen would remain in its current location, be modified from a full-service kitchen into a caterer's warming kitchen, and be reduced in size to provide space for the restrooms,

EXISTING KITCHEN

PROPOSED KITCHEN

The restrooms would then be more centrally located which will provide better access and monitoring, as well as increasing their size to meet Code requirements.

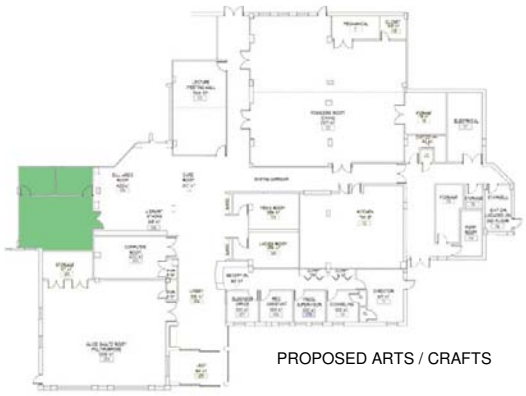
EXISTING RESTROOMS

PROPOSED RESTROOMS

The roof would be raised over a portion of the former administration area and added to the lobby and the proposed addition to provide a multipurpose room with a high ceiling.

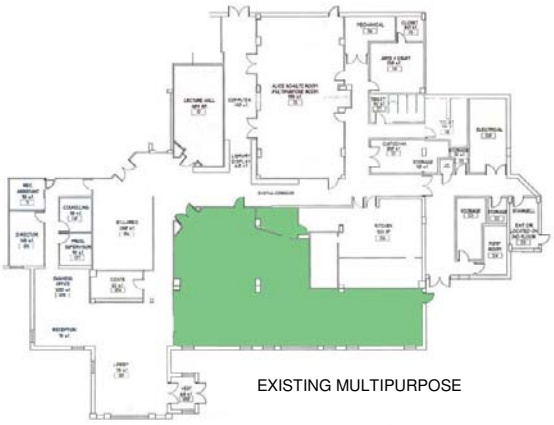
The arts and crafts space would occupy the remainder of the administration area.

EXISTING ARTS / CRAFTS

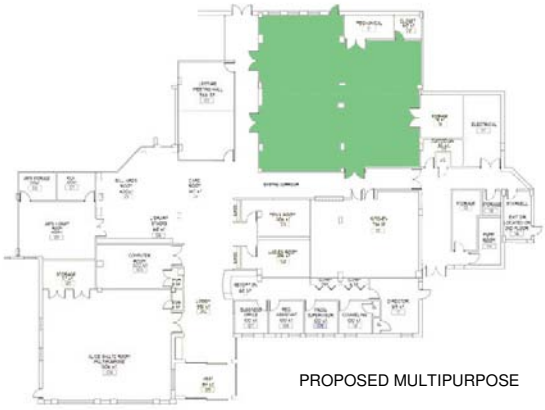


PROPOSED ARTS / CRAFTS

The dining room would then occupy the former multipurpose room, art room and restrooms. This creates a larger, more easily sub-dividable and flexible space.

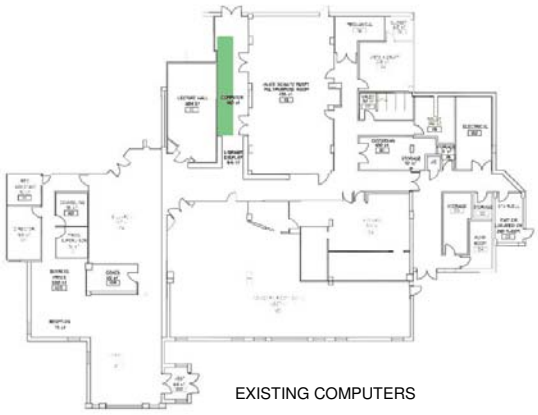


EXISTING MULTIPURPOSE

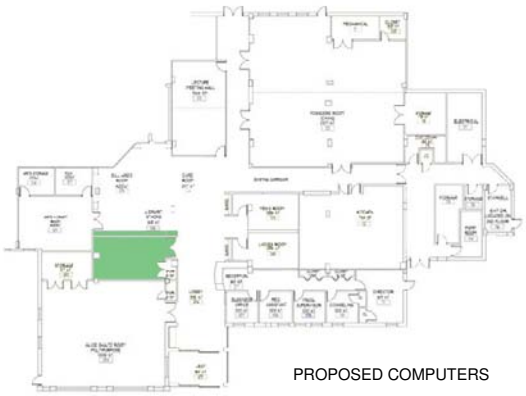


PROPOSED MULTIPURPOSE

The computer room will occupy the former coatroom and part of the billiards room. This frees up the area formerly housing the computers to expand the lecture hall.



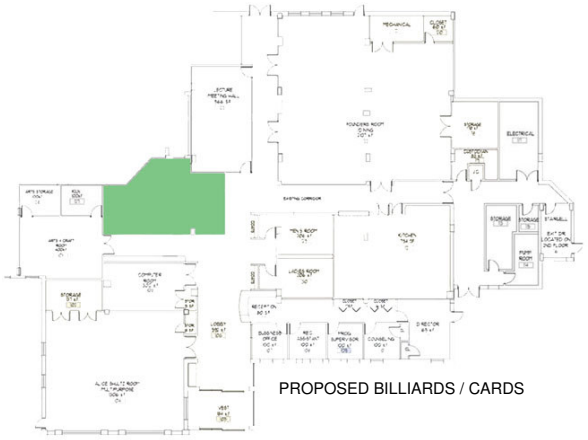
EXISTING COMPUTERS



PROPOSED COMPUTERS

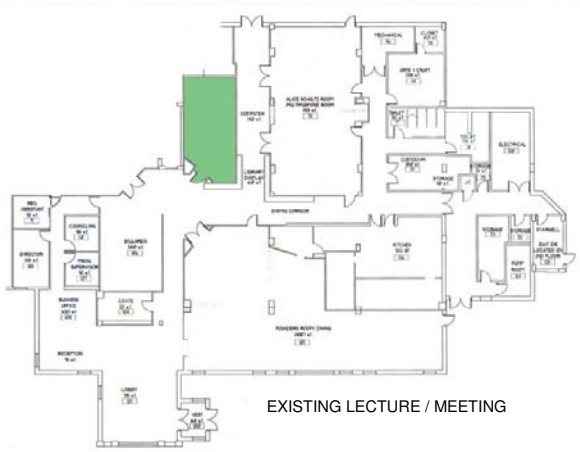
The billiard and card rooms would occupy the remaining space.

EXISTING BILLIARDS / CARDS

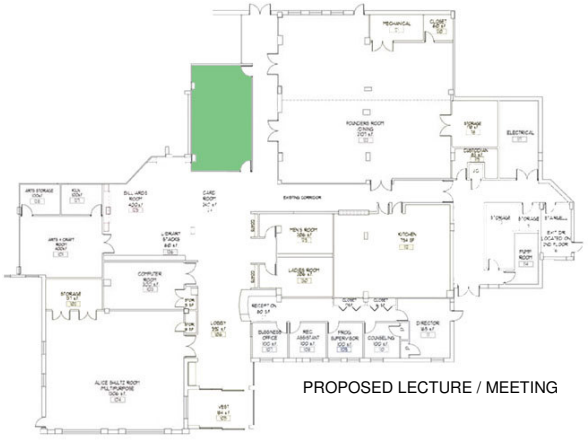


PROPOSED BILLIARDS / CARDS

Although the location of the lecture / meeting hall would not change, its shape and ingress/egress would be modified for better circulation and the size of the room would be enlarged.



EXISTING LECTURE / MEETING



PROPOSED LECTURE / MEETING

STRUCTURAL

The proposed new layout indicates that the existing structure will not be affected by the renovation except at the new vestibule and lobby area.

The existing lobby area roof is comprised of metal roof deck on open-web steel joists and structural steel girders supported by steel columns. The existing structure will be maintained at the existing lobby and vestibule area. The new entrance area will require a new opening through the existing masonry wall. This will require a new beam and bearing piers at each end to support the existing roof. The structure for the new addition at the lobby and vestibule enclosure will be comprised of a metal roof deck on steel joists, beams, and columns. Also, a new slab-on-grade and foundation walls with a spread footings will be required.

The proposed Alice Shultz Room will require demolition of the existing roof and exterior walls at the existing Business office and Reception area. The new high roof structure at the location of the demolished structure and the new addition will be comprised of a metal roof deck supported by steel joists, beams and columns at the level of the existing roof structure. The new structure will be approximately 24" deep. Also, a new slab-on-grade and exterior walls with a spread footing foundation will be required.

HVAC

With the proposed new layout essentially reconfiguring all of the Senior Center space, the HVAC systems must be reworked in their entirety. Currently, there is inadequate control of temperature since many areas are served by a single unit with only one thermostat. Additionally, some rooms (such as the Dining Room and Alice Schultz Multipurpose Room) require higher percentages of outside air than currently provided (to meet current Codes when they are used by large groups).

Several options exist. This simplest would be to provide Packaged Terminal Air conditioners (PTAC) for the new administrative offices**.** Classroom-type unit ventilators, which have higher outside air capabilities, would be provided for the Arts and Craft room and the Alice Schultz Room. A small gas-fired, hot water boiler would be installed in the Mechanical Room to serve these units and other miscellaneous areas that require heat (such as the vestibule).

The 12½ ton rooftop unit could be reused to serve the Founder's Room and Kitchen. The rest of the rooftop equipment would be removed and replaced with a single, variable volume rooftop air conditioning unit which would serve all of the remaining interior rooms. Each room would have a variable volume terminal unit with heating coil supplied from the rooftop unit and new boiler.

New exhaust fans would be provided for the Kiln Room, Alice Schultz Room, toilet rooms, storage rooms, and the Kitchen.

PLUMBING

As all of the toilet rooms are being reconfigured, new plumbing would be provided connected to the existing sanitary and vent mains. Domestic water would continue to be supplied from the existing gas fired water heaters and cold water main. Fixtures in the public toilet rooms would be low consumption type with self-closing valves on the sinks.

The new, additional roof area of the Alice Schultz Room would be drained directly to the exterior as the existing rain leaders in the area do not appear large enough to accept this additional roof surface.

KITCHEN

Depending on the reconfiguration of the Kitchen, the grease interceptor could be reused but all new floor sinks would be provided to suit the new layout. A new 140°F domestic water heater would be provided to supply the dishwasher and pot sink.

FIRE SUPPRESSION (SPRINKLERS)

The existing fire suppression sprinkler system mains would be reworked to suit the new layout. All new quick response sprinkler heads would be provide for the entire Senior Center

POWER DISTRIBUTION

The existing 1600 amp, 480Y/277V underground electrical service from the PEPCO pad-mounted transformer, fusible main switchboard, and rack-mounted main disconnect shall remain and be used for the proposed renovations to the building. The 480/277V power distribution panels connected to the six (6) main disconnects will be utilized, if amp capacity is sufficient for the renovations. All existing lighting panel boards, feeders, and branch circuit wiring serving the renovated area will be removed. The existing electrical distribution equipment serving the upper floors will remain unchanged. New panel boards, feeders, transformers, branch circuit wiring, etc. will be provided to serve the requirements of the equipment for the renovated area. All new mechanical equipment will be 277/480 volt to the extent possible.

LIGHTING

All existing lighting fixtures will be removed. New lighting will be recessed, direct or indirect fluorescent lay-in troffers or down lights in suspended ceiling construction. Fluorescent fixtures will utilize compact fluorescent, T5 or T8 lamps powered by electronic ballasts with less than 10% THD. Where dimming is desired, fluorescent fixtures will be provided with 1% architectural dimming ballasts. Emergency lighting will be supplied with battery-powered wall-mounted units or battery-powered fluorescent emergency ballasts in normal lighting fixtures.

CONVENIENCE OUTLETS (RECEPTACLES)

Convenience outlets (wall receptacles) will be provided as appropriate for plug-in equipment. Special outlets will be provided to suit special equipment such as kilns, refrigerators, computers, etc.

FIRE ALARM

The existing fire alarm systems will be replaced with a new addressable voice system. The new system will incorporate the latest digital technology and will meet the requirements of all Codes having jurisdiction. The existing fire alarm devices and equipment on the upper floors will not be altered and will be reconnected to the new fire alarm system.

The proposed interim improvements are summarized in the chart on the following pages:

PROPOSED PROGRAM FOR INTERIM GAITHERSBURG UPCOUNTY SENIOR CENTER SERVICES

Reception Area: 80 s.f.
- Securable space or desk
- Private view of computer screen
- Computer Network
- Service counter for member registration
- Phone

Business Office: 100 s.f.
- Open plan work area
- Privacy partitions
- Worktop for office equipment with storage below
- Adjustable wall shelves
- Computer network
- Phones

Director's Office: 165 s.f.
- Desk
- Seating for 2 guests
- Adjustable wall shelves
- Files
- Computer network
- Phone

Program Supervisor's Office: 100 s.f.
- Desk
- Adjustable wall shelves
- Files
- Computer network
- Phone

Recreation Assistant's Office: 100 s.f.
- Desk
- Adjustable wall shelves
- Files
- Computer network
- Phone

Counseling Room: 100 s.f.
- Private space for medical treatment or screening
- Private space for individual counseling
- Table plus two chairs
- Phone
- Computer Network
- Hand sink

Lobby: 592 s.f.
- Gathering/welcome area
- Staging area for transportation
- Direct access to bus drop off area

Coats: 60 s.f.
- Alcove for coat storage
- Direct access to lobby
- Highly visible for security

Rest Rooms: 412 total s.f.
- 4 ladies' stalls and 2 men's stalls plus 2 urinals
- ADA compliant
- Emergency alerts throughout
- Sanitation/cleanability a major concern
- Highly visible for staff monitoring

Kitchen / Food Service: 794 s.f.
- Modify to warming kitchen
- Add serving counter
- Update and re-organize layout for efficiency
- Replace outdated equipment
- Bring facility up to current standards

Storage: 433 s.f.
- Dedicated storage spaced throughout the facility
- Chairs, tables and equipment
- Individual built-in storage within each room

Custodian: 83 s.f.
- Worktop
- Supply storage
- Computer Network
- Phone

Founders Room / Dining Room: 2107 s.f.
- Seating at tables for 140
- Access to kitchen
- Dividable space
- Raised platform for speakers/performers
- Portable dance floor
- Seating at portable tables (seating 4-6 each)
- Public address system
- Projection screen
- Adjacent storage for tables and chairs

PROPOSED PROGRAM FOR INTERIM
GAITHERSBURG UPCOUNTY SENIOR CENTER SERVICES

Billiards Room: 400 s.f.
- Built-in seats for observation
- 2 pool tables

Reception Area: 80 s.f.
- Securable space or desk

Alice Schultz Room / Multipurpose: 1306 s.f
- Floor Space for 30
- High ceilings
- Appropriate flooring for dancing, aerobics and floor exercise
- Storage for hand-held equipment, mats, sound equipment, etc.
- Bench with storage below and hooks above for coats, purses, etc. visible for monitoring
- Sound equipment
- Large marker board
- Projection screen and TVs

Arts/Crafts Storage: 200 s.f.
- Storage for supplies, equipment and materials
- Kiln
- Sink

Arts/Crafts Room: 400 s.f.
- Workspace for 16 participants around tables
- Sink
- Open storage for projects (separate for ceramics and crafts)
- Appropriate ventilation for use of paints, glues and glazes
- Instructor's desk with computer

Card Room: 240 s.f.
- 6-8 card tables

Computer Room: 300 s.f.
- 8 networked stations arranged for privacy and classes
- Volunteer/instructor's desk with computer and phone
- 1 printer
- 1 scanner
- Storage space for supplies

Library Stack Area: 60 s.f.
- 20 linear feet of shelving
- Highly visible for monitoring
- Directly accessible for members

Lecture / Meeting Room: 566 s.f.
- Seating at tables for 36
- Dividable space
- Large marker board
- Projection screen and TV

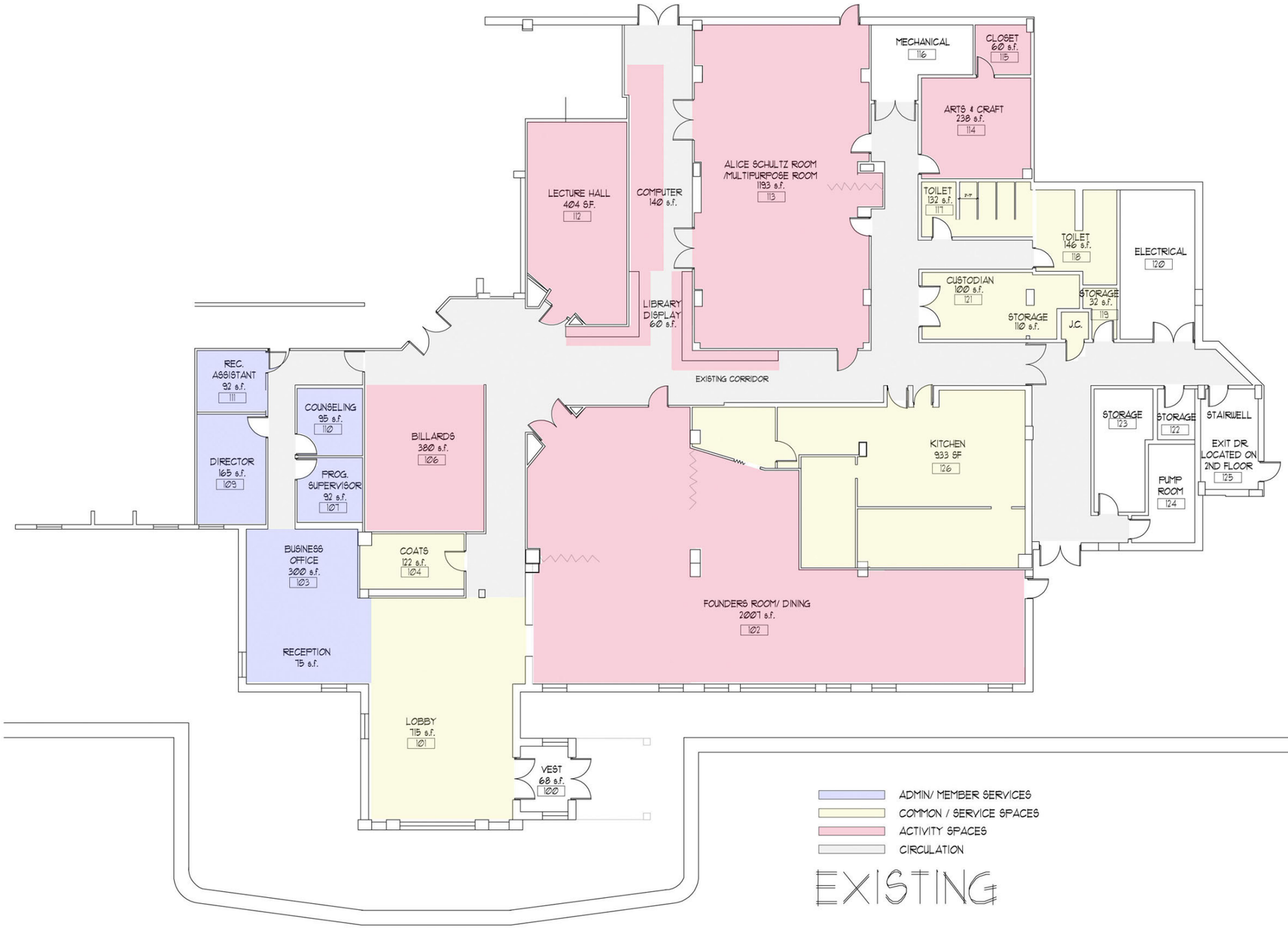
GAITHERSBURG UPCOUNTY SENIOR CENTER
SPACE ANALYSIS SUMMARY

11/30/2006

EXISTING		CURRENT NEED		PROJECTED NEED		PROPOSED IMPROVEMENTS		
		BASED ON 100 ACTIVE MEMBERS DAILY		BASED ON 200 ACTIVE MEMBERS DAILY		BASED ON 100 ACTIVE MEMBERS DAILY		CHANGE
ADMINISTRATION/MEMBER SERVICES	**SF**	**ADMINISTRATION/MEMBER SERVICES**	**S.F.**	**ADMINISTRATION/MEMBER SERVICES**	**S.F.**	**ADMINISTRATION/MEMBER SERVICES**	**S.F.**	**SF**
RECEPTION	75	RECEPTION	80	RECEPTION	80	RECEPTION	80	+5
BUSINESS OFFICE	300	BUSINESS OFFICE	350	BUSINESS OFFICE	450	BUSINESS OFFICE	100	-200
DIRECTOR	165	DIRECTOR	165	DIRECTOR	165	DIRECTOR	165	0
PROG. SUPERVISOR	95	PROG. SUPERVISOR	110	PROG. SUPERVISOR	110	PROG. SUPERVISOR	100	+5
REC. ASSISTANT	92	REC. ASSISTANT	110	REC. ASSISTANT	110	REC. ASSISTANT	100	+8
COUNSELING	92	COUNSELING	110	COUNSELING	110	COUNSELING	100	+8
		WELLNESS OFFICE	120	WELLNESS OFFICE	120			
		STAFF CONFERENCE ROOM	180	STAFF CONFERENCE ROOM	240			
		STAFF TOILET	60	STAFF TOILET	60			
		STORAGE	100	STORAGE	100	STORAGE	33	+33
				COUNSELING	110			
				EXAM ROOM	110			
				EXAM ROOM	110			
				PROGRAM ASSISTANT	110			
				PROGRAM ASSISTANT	110			
				VOLUNTEER OFFICE/WORKROOM	110			
SUB-TOTAL	819	SUB-TOTAL	1385	SUB-TOTAL	2205	SUB-TOTAL	678	-141
COMMON/SERVICE SPACES		**COMMON/SERVICE SPACES**		**COMMON/SERVICE SPACES**		**COMMON/SERVICE SPACES**		
VESTIBULE	68	VESTIBULE	100	VESTIBULE	100	VESTIBULE	184	+116
LOBBY	715	LOBBY	400	LOBBY	400	LOBBY	592	-123
COATS	122	COATS	60	COATS	60	COATS	60	-62
MEN'S ROOM	146	MEN'S ROOM	200	MEN'S ROOM	300	MEN'S ROOM	206	+60
WOMEN'S ROOM	132	WOMEN'S ROOM	200	WOMEN'S ROOM	300	WOMEN'S ROOM	206	+74
KITCHEN	933	KITCHEN	800	KITCHEN	800	KITCHEN	794	-139
STORAGE	142	STORAGE	400	STORAGE	800	STORAGE	400	+258
CUSTODIAN	100	CUSTODIAN	100	CUSTODIAN	100	CUSTODIAN	83	-17
				FAMILY TOILET	60			
				FOOD SERVICE LINE	300			
SUB-TOTAL	2358	SUB-TOTAL	2260	SUB-TOTAL	3220	SUB-TOTAL	2525	+167
ACTIVITY SPACES		**ACTIVITY SPACES**		**ACTIVITY SPACES**		**ACTIVITY SPACES**		
FOUNDERS ROOM - DINING	2007	FOUNDERS ROOM - DINING	2400	FOUNDERS ROOM - DINING	4000	FOUNDERS ROOM - DINING	2107	+100
BILLIARDS ROOM	380	BILLIARDS ROOM	400	BILLIARDS ROOM	1000	BILLIARDS ROOM	400	+20
		CARD ROOM	240	CARD ROOM	240	CARD ROOM	240	+240
LECTURE/MEETING ROOM	404	LECTURE/MEETING ROOM	600	LECTURE/MEETING ROOM	800	LECTURE/MEETING ROOM	566	+162
ALICE SCHULTZ ROOM - MULTIPURPOSE	1193	ALICE SCHULTZ ROOM - MULTIPURPOSE	1800	ALICE SCHULTZ ROOM - MULTIPURPOSE	1800	ALICE SCHULTZ ROOM - MULTIPURPOSE	1306	+113
COMPUTER ROOM	140	COMPUTER ROOM	300	COMPUTER ROOM	800	COMPUTER ROOM	300	+160
ARTS/CRAFTS ROOM	238	ARTS/CRAFTS ROOM	400	ARTS/CRAFTS ROOM	400	ARTS/CRAFTS ROOM	400	+162
ART STORAGE	60	ART STORAGE	200	ART STORAGE	200	ART STORAGE	200	+140
LIBRARY STACK AREA	60	LIBRARY STACK AREA	60	LIBRARY / MEDIA CENTER	400	LIBRARY / MEDIA CENTER	60	0
				FITNESS CENTER	1500			
				MEN'S LOCKER/CHANGING ROOM	300			
				WOMEN'S LOCKER/CHANGING ROOM	300			
				ARTS / PAINTS ROOM	400			
				ARTS / PAINTS ROOM STORAGE	100			
				ARTS / CRAFTS ROOM	400			
				ARTS / CRAFTS ROOM STORAGE	100			
				RETAIL / CONVENIENCE SHOP	200			
				STAGE AREA	400			
				GENERAL CLASSROOM	800			
				MUSIC ROOM	800			
				OUTDOOR ACTIVITIES AT 2500 SQ. FT.				
SUB-TOTAL	4482	SUB-TOTAL	6400	SUB-TOTAL	14940	SUB-TOTAL	5579	+1097
TOTAL NET SQ. FT.	7659	TOTAL NET SQ. FT.	10045	TOTAL NET SQ. FT.	20365	TOTAL NET SQ. FT.	8782	+1123
Grossing Factor - 67% 67% grossing is well within industry standards	3772	Grossing Factor - 67%	4948	Grossing Factor - 67%	10031	Grossing Factor - 67%	3275	
TOTAL GROSS SQ. FT.	11431	TOTAL GROSS SQ. FT.	14993	TOTAL GROSS SQ. FT.	30396	TOTAL GROSS SQ. FT.	12057	+626

6. REFERENCES

FLOOR PLANS



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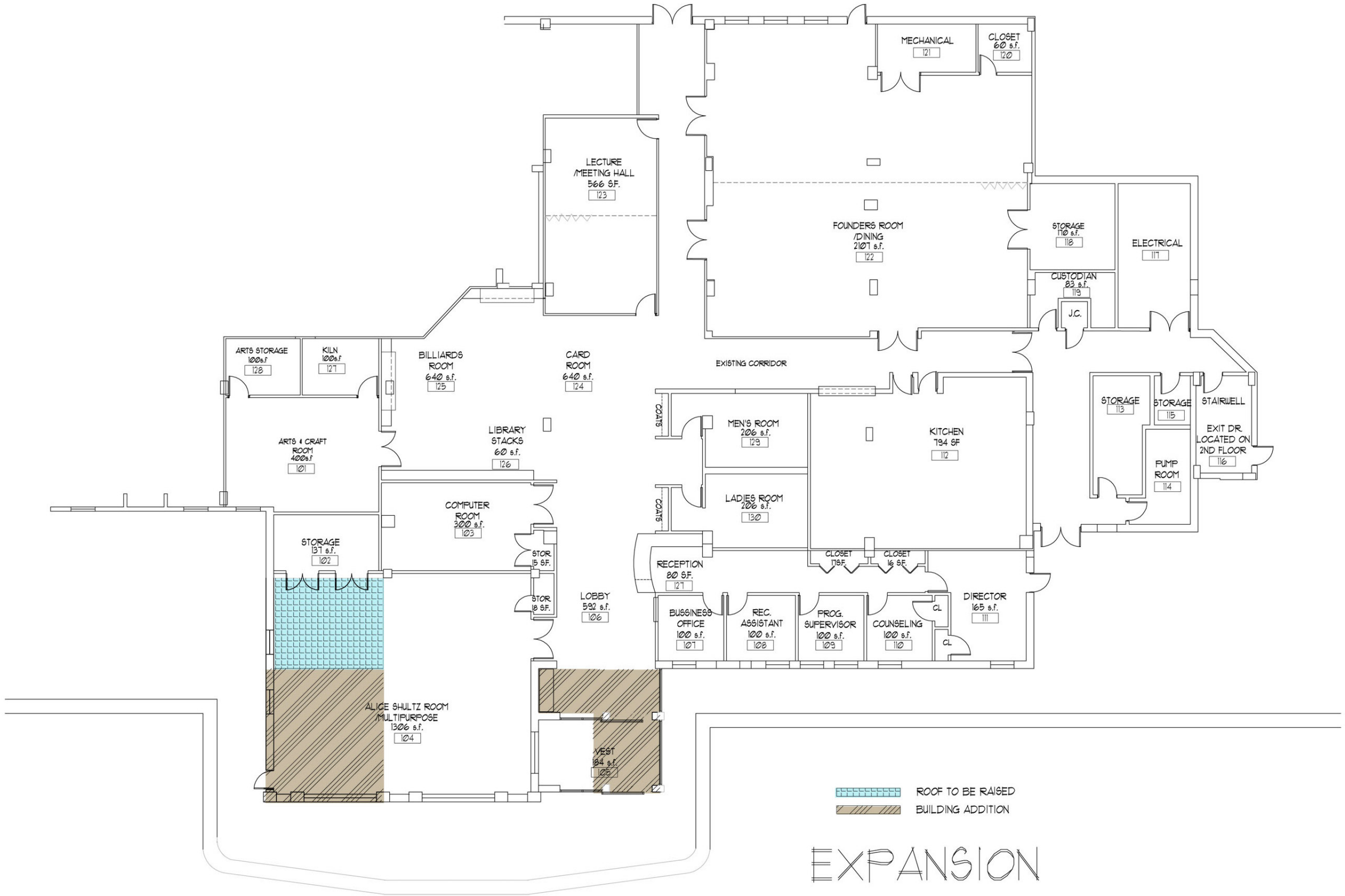

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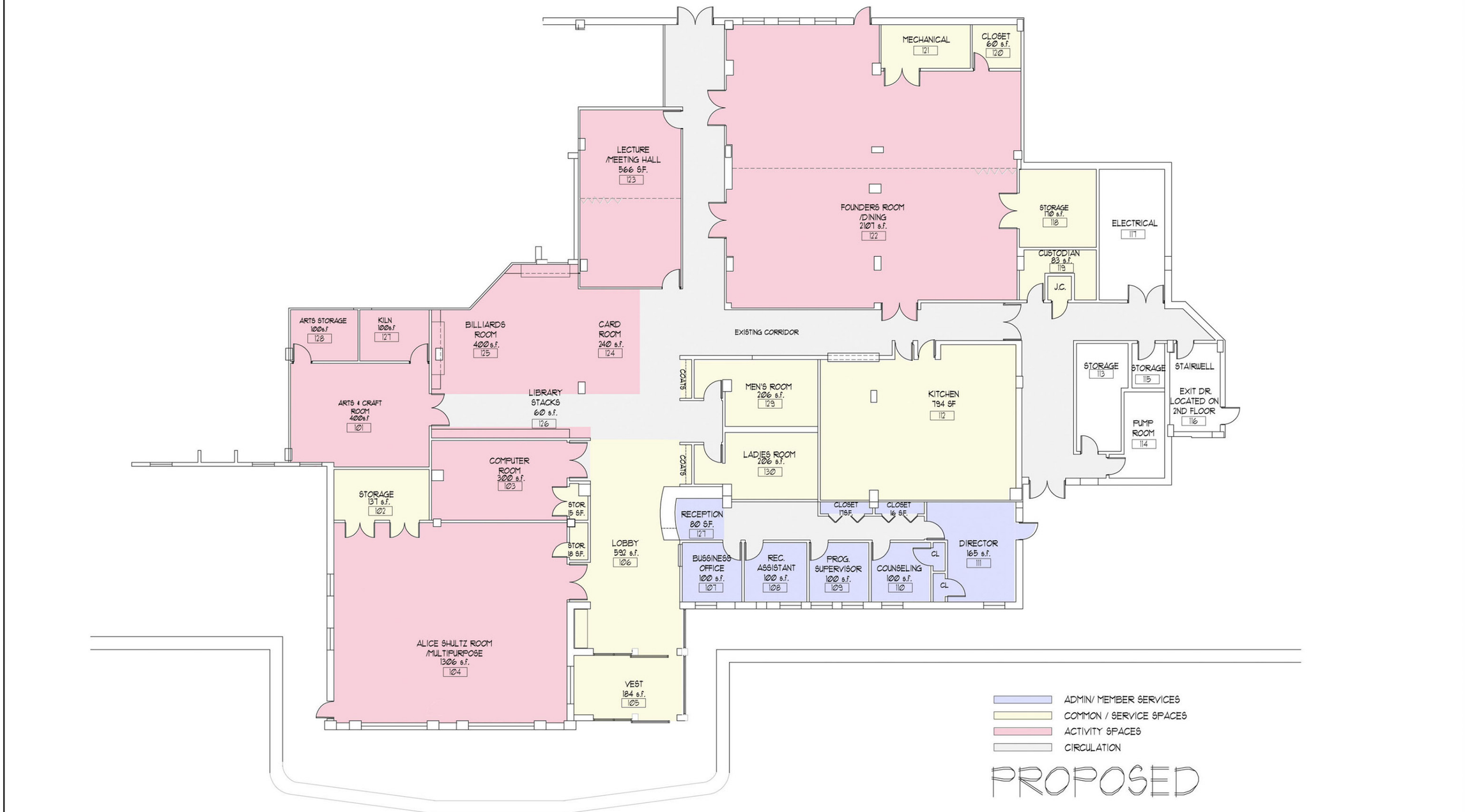

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2003 INTERNATIONAL BUILDING CODE

TABLE 302.3.2
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)[a]

USE	A-1	A-2	A-3	A-4	A-5	B[b]	E	F-1	F-2	H-1	H-2	H-3	H-4	H-5	I-1	I-2	I-3	I-4	M[b]	R-1	R-2	R-3, R-4	S-1	S-2[c]	U
A-1	—	2	2	2	2	2	2	3	2	NP	4	3	2	4	2	2	2	2	2	2	2	2	3	2	1
A-2[c]	—	—	2	2	2	2	2	3	2	NP	4	3	2	4	2	2	2	2	2	2	2	2	3	2	1
A-3	—	—	—	2	2	2	2	3	2	NP	4	3	2	4	2	2	2	2	2	2	2	2	3	2	1
A-4	—	—	—	—	2	2	2	3	2	NP	4	3	2	4	2	2	2	2	2	2	2	2	3	2	1
A-5	—	—	—	—	—	2	2	3	2	NP	4	3	2	4	2	2	2	2	2	2	2	2	3	2	1
B[b]	—	—	—	—	—	—	2	3	2	NP	2	1	1	1	2	2	2	2	2	2	2	2	3	2	1
E	—	—	—	—	—	—	—	3	2	NP	4	3	2	3	2	2	2	2	2	2	2	2	3	2	1
F-1	—	—	—	—	—	—	—	—	3	NP	2	1	1	1	3	3	3	3	3	3	3	3	3	3	3
F-2	—	—	—	—	—	—	—	—	—	NP	2	1	1	1	2	2	2	2	2	2	2	2	3	2	1
H-1	—	—	—	—	—	—	—	—	—	—	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	1	2	2	4	4	4	4	2	4	4	4	2	2	1
H-3	—	—	—	—	—	—	—	—	—	—	—	—	1	1	4	3	3	3	1	3	3	3	1	1	1
H-4	—	—	—	—	—	—	—	—	—	—	—	—	—	1	4	4	4	4	1	4	4	4	1	1	1
H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	4	4	3	1	4	4	4	1	1	3
I-1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	2	2	2	2	2	4	3	2
I-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	2	2	2	2	3	2	1
I-3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	2	2	2	3	2	1
I-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	2	2	3	2	1
M[b]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	2	3	2	1
R-1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	3	2	1
R-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	3	2	1
R-3, R-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	2[d]	1[d]
S-1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	3
S-2[c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
U	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

For SI: 1 square foot = 0.0929 m^2.

NP = Not permitted.

a. See exception to Section 302.3.2 for reductions permitted.

b. Occupancy separation need not be provided for storage areas within Groups B and M if the:

1. Area is less than 10 percent of the floor area;
2. Area is provided with an automatic fire-extinguishing system and is less than 3,000 square feet; or
3. Area is less than 1,000 square feet.

c. Areas used only for private or pleasure vehicles shall be allowed to reduce separation by 1 hour.

d. See Section 406.1.4.

e. Commercial kitchens need not be separated from the restaurant seating areas that they serve.

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TABLE 503
ALLOWABLE HEIGHT AND BUILDING AREAS
Height limitations shown as stories and feet above grade plane.
Area limitations as determined by the definition of "Area, building," per floor.

		TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
GROUP	Hgt(feet) Hgt(S)	UL	160	65	55	65	55	65	50	40
A-1	S	UL	5	3	2	3	2	3	2	1
	A	UL	UL	15,500	8,500	14,000	8,500	15,000	11,500	5,500
A-2	S	UL	11	3	2	3	2	3	2	1
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
A-3	S	UL	11	3	2	3	2	3	2	1
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
A-4	S	UL	11	3	2	3	2	3	2	1
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
A-5	S	UL	UL	UL	UL	UL	UL	UL	UL	UL
	A	UL	UL	UL	UL	UL	UL	UL	UL	UL
B	S	UL	11	5	4	5	4	5	3	2
	A	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
E	S	UL	5	3	2	3	2	3	1	1
	A	UL	UL	26,500	14,500	23,500	14,500	25,500	18,500	9,500
F-1	S	UL	11	4	2	3	2	4	2	1
	A	UL	UL	25,000	15,500	19,000	12,000	33,500	14,000	8,500
F-2	S	UL	11	5	3	4	3	5	3	2
	A	UL	UL	37,500	23,000	28,500	18,000	50,500	21,000	13,000
H-1	S	1	1	1	1	1	1	1	1	NP
	A	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	NP
H-2	S	UL	3	2	1	2	1	2	1	1
	A	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	3,000
H-3	S	UL	6	4	2	4	2	4	2	1
	A	UL	60,000	26,500	14,000	17,500	13,000	25,500	10,000	5,000
H-4	S	UL	7	5	3	5	3	5	3	2
	A	UL	UL	37,500	17,500	28,500	17,500	36,000	18,000	6,500
H-5	S	3	3	3	3	3	3	3	3	2
	A	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
I-1	S	UL	9	4	3	4	3	4	3	2
	A	UL	55,000	19,000	10,000	16,500	10,000	18,000	10,500	4,500
I-2	S	UL	4	2	1	1	NP	1	1	NP
	A	UL	UL	15,000	11,000	12,000	NP	12,000	9,500	NP
I-3	S	UL	4	2	1	2	1	2	2	1
	A	UL	UL	15,000	10,000	10,500	7,500	12,000	7,500	5,000
I-4	S	UL	5	3	2	3	2	3	1	1
	A	UL	60,500	26,500	13,000	23,500	13,000	25,500	18,500	9,000
M	S	UL	11	4	4	4	4	4	3	1
	A	UL	UL	21,500	12,500	18,500	12,500	20,500	14,000	9,000
R-1	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
R-2[a]	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
R-3[a]	S	UL	11	4	4	4	4	4	3	3
	A	UL	UL	UL	UL	UL	UL	UL	UL	UL
R-4	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
S-1	S	UL	11	4	3	3	3	4	3	1
	A	UL	48,000	26,000	17,500	26,000	17,500	25,500	14,000	9,000
S-2[b, c]	S	UL	11	5	4	4	4	5	4	2
	A	UL	79,000	39,000	26,000	39,000	26,000	38,500	21,000	13,500
U[c]	S	UL	5	4	2	3	2	4	2	1
	A	UL	35,500	19,000	8,500	14,000	8,500	18,000	9,000	5,500

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.
UL = Unlimited, NP = Not permitted.
a. As applicable in Section 101.2.
b. For open parking structures, see Section 406.3.
c. For private garages, see Section 406.1.

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TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (hours)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A[d]	B	A[d]	B	HT	A[d]	B
Structural frame[a] Including columns, girders, trusses	3[b]	2[b]	1	0	1	0	HT	1	0
Bearing walls									
Exterior[f]	3	2	1	0	2	2	2	1	0
Interior	3[b]	2[b]	1	0	1	0	1/HT	1	0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[e]	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction Including supporting beams and joists	2	2	1	0	1	0	HT	1	0
Roof construction Including supporting beams and joists	$1^1/_2$[c]	1[c]	1[c]	0	1[c]	0	HT	1[c]	0

For SI: 1 foot = 304.8 mm.

a. The structural frame shall be considered to be the columns and the girders, beams, trusses and spandrels having direct connections to the columns and bracing members designed to carry gravity loads. The members of floor or roof panels which have no connection to the columns shall be considered secondary members and not a part of the structural frame.

b. Roof supports: Fire-resistance ratings of structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

c. 1. Except in Factory-Industrial (F-1), Hazardous (H), Mercantile (M) and Moderate-Hazard Storage (S-1) occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

2. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.

3. In Type I and II construction, fire-retardant-treated wood shall be allowed in buildings including girders and trusses as part of the roof construction when the building is:
   i. Two stories or less in height;
   ii. Type II construction over two stories; or
   iii. Type I construction over two stories and the vertical distance from the upper floor to the roof is 20 feet or more.

d. An approved automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Section 506.3 or an allowable height increase in accordance with Section 504.2. The 1-hour substitution for the fire resistance of exterior walls shall not be permitted.

e. Not less than the fire-resistance rating required by other sections of this code.

f. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

TABLE 602
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE[a]

FIRE SEPARATION DISTANCE (feet)	TYPE OF CONSTRUCTION	GROUP H	GROUP F-1, M, S-1	GROUP A, B, E, F-2, I, R[b], S-2, U
< 5[c]	All	3	2	1
≥ 5	IA	3	2	1
< 10	Others	2	1	1
≥ 10	IA, IB	2	1	1
< 30	IIB, VB	1	0	0
	Others	1	1	1
≥ 30	All	0	0	0

For SI: 1 foot = 304.8 mm.

a. Load-bearing exterior walls shall also comply with the fire-resistance rating requirements of Table 601.

b. Group R-3 and Group U when used as accessory to Group R-3, as applicable in Section 101.2 shall not be required to have a fire-resistance rating where the fire separation distance is 3 feet or more.

c. See Section 503.2 for party walls.

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TABLE 803.5
INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY[k]

GROUP	SPRINKLERED[l]			NONSPRINKLERED		
	Vertical exits and exit passageways[a, b]	Exit access corridors and other exitways	Rooms and enclosed spaces[c]	Vertical exits and exit passageways[a, b]	Exit access corridors and other exitways	Rooms and enclosed spaces[c]
A-1 & A-2	B	B	C	A	A[d]	B[e]
A-3[f], A-4, A-5	B	B	C	A	A[d]	C
B, E, M, R-1, R-4	B	C	C	A	B	C
F	C	C	C	B	C	C
H	B	B	C[g]	A	A	B
I-1	B	C	C	A	B	B
I-2	B	B	B[h, i]	A	A	B
I-3	A	A[j]	C	A	A	B
I-4	B	B	B[h, i]	A	A	B
R-2	C	C	C	B	B	C
R-3	C	C	C	C	C	C
S	C	C	C	B	B	C
U	No restrictions			No restrictions		

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m^2.

a. Class C interior finish materials shall be permitted for wainscotting or paneling of not more than 1,000 square feet of applied surface area in the grade lobby where applied directly to a noncombustible base or over furring strips applied to a noncombustible base and fireblocked as required by Section 803.4.1.

b. In vertical exits of buildings less than three stories in height of other than Group I-3, Class B interior finish for nonsprinklered buildings and Class C interior finish for sprinklered buildings shall be permitted.

c. Requirements for rooms and enclosed spaces shall be based upon spaces enclosed by partitions. Where a fire-resistance rating is required for structural elements, the enclosing partitions shall extend from the floor to the ceiling. Partitions that do not comply with this shall be considered enclosing spaces and the rooms or spaces on both sides shall be considered one. In determining the applicable requirements for rooms and enclosed spaces, the specific occupancy thereof shall be the governing factor regardless of the group classification of the building or structure.

d. Lobby areas in Group A-1, A-2 and A-3 occupancies shall not be less than Class B materials.

e. Class C interior finish materials shall be permitted in places of assembly with an occupant load of 300 persons or less.

f. For churches and places of worship, wood used for ornamental purposes, trusses, paneling or chancel furnishing shall be permitted.

g. Class B material is required where the building exceeds two stories.

h. Class C interior finish materials shall be permitted in administrative spaces.

i. Class C interior finish materials shall be permitted in rooms with a capacity of four persons or less.

j. Class B materials shall be permitted as wainscotting extending not more than 48 inches above the finished floor in exit access corridors.

k. Finish materials as provided for in other sections of this code.

l. Applies when the vertical exits, exit passageways, exit access corridors or exitways, or rooms and spaces are protected by a sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

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1003.3.4 Clear width. Protruding objects shall not reduce the minimum clear width of accessible routes as required in Section 1104.

1003.4 Floor surface. Walking surfaces of the means of egress shall have a slip-resistant surface and be securely attached.

1003.5 Elevation change. Where changes in elevation of less than 12 inches (305 mm) exist in the means of egress, sloped surfaces shall be used. Where the slope is greater than one unit vertical in 20 units horizontal (5-percent slope), ramps complying with Section 1010 shall be used. Where the difference in elevation is 6 inches (152 mm) or less, the ramp shall be equipped with either handrails or floor finish materials that contrast with adjacent floor finish materials.

Exceptions:

1. A single step with a maximum riser height of 7 inches (178 mm) is permitted for buildings with occupancies in Groups F, H, R-2 and R-3 as applicable in Section 101.2, and Groups S and U at exterior doors not required to be accessible by Chapter 11.
2. A stair with a single riser or with two risers and a tread is permitted at locations not required to be accessible by Chapter 11, provided that the risers and treads comply with Section 1009.3, the minimum depth of the tread is 13 inches (330 mm) and at least one handrail complying with Section 1009.11 is provided within 30 inches (762 mm) of the centerline of the normal path of egress travel on the stair.
3. An aisle serving seating that has a difference in elevation less than 12 inches (305 mm) is permitted at locations not required to be accessible by Chapter 11, provided that the risers and treads comply with Section 1024.11 and the aisle is provided with a handrail complying with Section 1024.13.

Any change in elevation in a corridor serving nonambulatory persons in a Group I-2 occupancy shall be by means of a ramp or sloped walkway.

1003.6 Means of egress continuity. The path of egress travel along a means of egress shall not be interrupted by any building element other than a means of egress component as specified in this chapter. Obstructions shall not be placed in the required width of a means of egress except projections permitted by this chapter. The required capacity of a means of egress system shall not be diminished along the path of egress travel.

1003.7 Elevators, escalators and moving walks. Elevators, escalators and moving walks shall not be used as a component of a required means of egress from any other part of the building.

Exception: Elevators used as an accessible means of egress in accordance with Section 1007.4.

SECTION 1004
OCCUPANT LOAD

1004.1 Design occupant load. In determining means of egress requirements, the number of occupants for whom means of egress facilities shall be provided shall be established by the largest number computed in accordance with Sections 1004.1.1 through 1004.1.3.

1004.1.1 Actual number. The actual number of occupants for whom each occupied space, floor or building is designed.

1004.1.2 Number by Table 1004.1.2. The number of occupants computed at the rate of one occupant per unit of area as prescribed in Table 1004.1.2.

TABLE 1004.1.2
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

OCCUPANCY	FLOOR AREA IN SQ. FT. PER OCCUPANT
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal	
Baggage claim	20 gross
Baggage handling	300 gross
Concourse	100 gross
Waiting areas	15 gross
Assembly	
Gaming floors (keno, slots, etc.)	11 gross
Assembly with fixed seats	See Section 1004.7
Assembly without fixed seats	
Concentrated (chairs only—not fixed)	7 net
Standing space	5 net
Unconcentrated (tables and chairs)	15 net
Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas	7 net
Business areas	100 gross
Courtrooms—other than fixed seating areas	40 net
Dormitories	50 gross
Educational	
Classroom area	20 net
Shops and other vocational room areas	50 net
Exercise rooms	50 gross
H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas	
Inpatient treatment areas	240 gross
Outpatient areas	100 gross
Sleeping areas	120 gross
Kitchens, commercial	200 gross
Library	
Reading rooms	50 net
Stack area	100 gross
Locker rooms	50 gross
Mercantile	
Areas on other floors	60 gross
Basement and grade floor areas	30 gross
Storage, stock, shipping areas	300 gross
Parking garages	200 gross
Residential	200 gross
Skating rinks, swimming pools	
Rink and pool	50 gross
Decks	15 gross
Stages and platforms	15 net
Accessory storage areas, mechanical equipment room	300 gross
Warehouses	500 gross

For SI: 1 square foot = 0.0929 m^2.

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Section 1024. Aisles serving reviewing stands, grandstands and bleachers shall also comply with Section 1024.

The required width of aisles shall be unobstructed.

Exception: Doors, when fully opened, and handrails shall not reduce the required width by more than 7 inches (178 mm). Doors in any position shall not reduce the required width by more than one-half. Other nonstructural projections such as trim and similar decorative features are permitted to project into the required width 1.5 inches (38 mm) from each side.

1013.4.1 Groups B and M. In Group B and M occupancies, the minimum clear aisle width shall be determined by Section 1005.1 for the occupant load served, but shall not be less than 36 inches (914 mm).

Exception: Nonpublic aisles serving less than 50 people, and not required to be accessible by Chapter 11 need not exceed 28 inches (711 mm) in width.

1013.4.2 Seating at tables. Where seating is located at a table or counter and is adjacent to an aisle or aisle accessway, the measurement of required clear width of the aisle or aisle accessway shall be made to a line 19 inches (483 mm) away from and parallel to the edge of the table or counter. The 19-inch (483 mm) distance shall be measured perpendicular to the side of the table or counter. In the case of other side boundaries for aisle or aisle accessways, the clear width shall be measured to walls, edges of seating and tread edges, except that handrail projections are permitted.

Exception: Where tables or counters are served by fixed seats, the width of the aisle accessway shall be measured from the back of the seat.

1013.4.2.1 Aisle accessway for tables and seating. Aisle accessways serving arrangements of seating at tables or counters shall have sufficient clear width to conform to the capacity requirements of Section 1005.1 but shall not have less than the appropriate minimum clear width specified in Section 1013.4.1.

1013.4.2.2 Table and seating accessway width. Aisle accessways shall provide a minimum of 12 inches (305 mm) of width plus 0.5 inch (12.7 mm) of width for each additional 1 foot (305 mm), or fraction thereof, beyond 12 feet (3658 mm) of aisle accessway length measured from the center of the seat farthest from an aisle.

Exception: Portions of an aisle accessway having a length not exceeding 6 feet (1829 mm) and used by a total of not more than four persons.

1013.4.2.3 Table and seating aisle accessway length. The length of travel along the aisle accessway shall not exceed 30 feet (9144 mm) from any seat to the point where a person has a choice of two or more paths of egress travel to separate exits.

1013.5 Egress balconies. Balconies used for egress purposes shall conform to the same requirements as corridors for width, headroom, dead ends and projections. Exterior balconies shall be designed to minimize accumulation of snow or ice that impedes the means of egress.

Exception: Exterior balconies and concourses in outdoor stadiums shall be exempt from the design requirement to protect against the accumulation of snow or ice.

1013.5.1 Wall separation. Exterior egress balconies shall be separated from the interior of the building by walls and opening protectives as required for corridors.

Exception: Separation is not required where the exterior egress balcony is served by at least two stairs and a dead-end travel condition does not require travel past an unprotected opening to reach a stair.

1013.5.2 Openness. The long side of an egress balcony shall be at least 50 percent open, and the open area above the guards shall be so distributed as to minimize the accumulation of smoke or toxic gases.

SECTION 1014
EXIT AND EXIT ACCESS DOORWAYS

1014.1 Exit or exit access doorways required. Two exits or exit access doorways from any space shall be provided where one of the following conditions exists:

1. The occupant load of the space exceeds the values in Table 1014.1.
2. The common path of egress travel exceeds the limitations of Section 1013.3.
3. Where required by Sections 1014.3, 1014.4 and 1014.5.

Exception: Group I-2 occupancies shall comply with Section 1013.2.2.

TABLE 1014.1
SPACES WITH ONE MEANS OF EGRESS

OCCUPANCY	MAXIMUM OCCUPANT LOAD
A, B, E, F, M, U	50
H-1, H-2, H-3	3
H-4, H-5, I-1, I-3, I-4, R	10
S	30

1014.1.1 Three or more exits. Access to three or more exits shall be provided from a floor area where required by Section 1018.1.

1014.2 Exit or exit access doorway arrangement. Required exits shall be located in a manner that makes their availability obvious. Exits shall be unobstructed at all times. Exit and exit access doorways shall be arranged in accordance with Sections 1014.2.1 and 1014.2.2.

1014.2.1 Two exits or exit access doorways. Where two exits or exit access doorways are required from any portion of the exit access, the exit doors or exit access doorways shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a

2. In outdoor facilities with open exit access components and open exterior stairs or ramps, travel distance is permitted to be measured to the closest riser of a stair or the closest slope of the ramp.
3. Where an exit stair is permitted to be unenclosed in accordance with Exception 8 or 9 of Section 1019.1, the travel distance shall be measured from the most remote point within a building to an exit discharge.

TABLE 1015.1
EXIT ACCESS TRAVEL DISTANCE[a]

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, I-1, M, R, S-1	200	250[b]
B	200	300[c]
F-2, S-2, U	300	400[b]
H-1	Not Permitted	75[c]
H-2	Not Permitted	100[c]
H-3	Not Permitted	150[c]
H-4	Not Permitted	175[c]
H-5	Not Permitted	200[c]
I-2, I-3, I-4	150	200[c]

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to exit access travel distance requirements:
Section 402: For the distance limitation in malls.
Section 404: For the distance limitation through an atrium space.
Section 1015.2: For increased limitation in Groups F-1 and S-1.
Section 1024.7: For increased limitation in assembly seating.
Section 1024.7: For increased limitation for assembly open-air seating.
Section 1018.2: For buildings with one exit.
Chapter 31: For the limitation in temporary structures.

b. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where sprinkler systems according to Section 903.3.1.2 are permitted.

c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

1015.2 Roof vent increase. In buildings which are one story in height, equipped with automatic heat and smoke roof vents complying with Section 910 and equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the maximum exit access travel distance shall be 400 feet (122 m) for occupancies in Group F-1 or S.

1015.3 Exterior egress balcony increase. Travel distances specified in Section 1015.1 shall be increased up to an additional 100 feet (30 480 mm) provided the last portion of the exit access leading to the exit occurs on an exterior egress balcony constructed in accordance with Section 1013.5. The length of such balcony shall not be less than the amount of the increase taken.

SECTION 1016
CORRIDORS

1016.1 Construction. Corridors shall be fire-resistance rated in accordance with Table 1016.1. The corridor walls required to be fire-resistance rated shall comply with Section 708 for fire partitions.

Exceptions:

1. A fire-resistance rating is not required for corridors in an occupancy in Group E where each room that is used for instruction has at least one door directly to the exterior and rooms for assembly purposes have at least one-half of the required means of egress doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.
2. A fire-resistance rating is not required for corridors contained within a dwelling or sleeping unit in an occupancy in Group R.
3. A fire-resistance rating is not required for corridors in open parking garages.
4. A fire-resistance rating is not required for corridors in an occupancy in Group B which is a space requiring only a single means of egress complying with Section 1014.1.

TABLE 1016.1
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system[c]
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A, B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	1	0.5
I-2[a], I-4	All	Not Permitted	0
I-1, I-3	All	Not Permitted	1[b]

a. For requirements for occupancies in Group I-2, see Section 407.3.

b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.7.

c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 where allowed.

1004.1.3 Number by combination. Where occupants from accessory spaces egress through a primary area, the calculated occupant load for the primary space shall include the total occupant load of the primary space plus the number of occupants egressing through it from the accessory space.

1004.2 Increased occupant load. The occupant load permitted in any building or portion thereof is permitted to be increased from that number established for the occupancies in Table 1004.1.2 provided that all other requirements of the code are also met based on such modified number and the occupant load shall not exceed one occupant per 5 square feet (0.47 m^2) of occupiable floor space. Where required by the building official, an approved aisle, seating or fixed equipment diagram substantiating any increase in occupant load shall be submitted. Where required by the building official, such diagram shall be posted.

1004.3 Posting of occupant load. Every room or space that is an assembly occupancy shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or authorized agent.

1004.4 Exiting from multiple levels. Where exits serve more than one floor, only the occupant load of each floor considered individually shall be used in computing the required capacity of the exits at that floor, provided that the exit capacity shall not decrease in the direction of egress travel.

1004.5 Egress convergence. Where means of egress from floors above and below converge at an intermediate level, the capacity of the means of egress from the point of convergence shall not be less than the sum of the two floors.

1004.6 Mezzanine levels. The occupant load of a mezzanine level with egress onto a room or area below shall be added to that room or area's occupant load, and the capacity of the exits shall be designed for the total occupant load thus established.

1004.7 Fixed seating. For areas having fixed seats and aisles, the occupant load shall be determined by the number of fixed seats installed therein.

For areas having fixed seating without dividing arms, the occupant load shall not be less than the number of seats based on one person for each 18 inches (457 mm) of seating length.

The occupant load of seating booths shall be based on one person for each 24 inches (610 mm) of booth seat length measured at the backrest of the seating booth.

1004.8 Outdoor areas. Yards, patios, courts and similar outdoor areas accessible to and usable by the building occupants shall be provided with means of egress as required by this chapter. The occupant load of such outdoor areas shall be assigned by the building official in accordance with the anticipated use. Where outdoor areas are to be used by persons in addition to the occupants of the building, and the path of egress travel from the outdoor areas passes through the building, means of egress requirements for the building shall be based on the sum of the occupant loads of the building plus the outdoor areas.

Exceptions:

1. Outdoor areas used exclusively for service of the building need only have one means of egress.
2. Both outdoor areas associated with Group R-3 and individual dwelling units of Group R-2, as applicable in Section 101.2.

1004.9 Multiple occupancies. Where a building contains two or more occupancies, the means of egress requirements shall apply to each portion of the building based on the occupancy of that space. Where two or more occupancies utilize portions of the same means of egress system, those egress components shall meet the more stringent requirements of all occupancies that are served.

SECTION 1005
EGRESS WIDTH

1005.1 Minimum required egress width. The means of egress width shall not be less than required by this section. The total width of means of egress in inches (mm) shall not be less than the total occupant load served by the means of egress multiplied by the factors in Table 1005.1 and not less than specified elsewhere in this code. Multiple means of egress shall be sized such that the loss of any one means of egress shall not reduce the available capacity to less than 50 percent of the required capacity. The maximum capacity required from any story of a building shall be maintained to the termination of the means of egress.

Exception: Means of egress complying with Section 1024.

TABLE 1005.1
EGRESS WIDTH PER OCCUPANT SERVED

	WITHOUT SPRINKLER SYSTEM		WITH SPRINKLER SYSTEM[a]	
OCCUPANCY	Stairways (inches per occupant)	Other egress components (inches per occupant)	Stairways (inches per occupant)	Other egress components (inches per occupant)
Occupancies other than those listed below	0.3	0.2	0.2	0.15
Hazardous: H-1, H-2, H-3 and H-4	0.7	0.4	0.3	0.2
Institutional: I-2	NA	NA	0.3	0.2

For SI: 1 inch = 25.4 mm. NA = Not applicable.

a. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

1005.2 Door encroachment. Doors opening into the path of egress travel shall not reduce the required width to less than one-half during the course of the swing. When fully open, the door shall not project more than 7 inches (178 mm) into the required width.

Exception: The restrictions on a door swing shall not apply to doors within individual dwelling units and sleeping units of Group R-2 and dwelling units of Group R-3.

DGS / DBS FACILITY PROGRAM MANUAL, POLICIES AND STANDARDS

CHAPTER IV
POLICIES and STANDARDS

4 OFFICE SPACE STANDARDS (Facility Program Manual, DGS/DBM, latest edition)

OFFICE TYPE	RECOMMENDED NASF
Cabinet Secretary & Agency Executive Director	300
Deputy Secretary & Agency Deputy Director	250
Judge, Commissioner (full-time), Director, Assistant Secretary & Division Chief	200
Assistant Division Chief, Assistant Director & Branch Head	175
Attorney, Doctor & Field Office Supervisor	150
Supervisory Professional (Private Office)	126
Supervisory Professional (Open Office)	120
Non-supervisory Professional (Private Office)	108
Non-supervisory Professional (Open Office)	90
Secretaries & Drafting Stations (CADD) (Conventional Office)	90
Secretaries & Drafting Stations (CADD) (Open Office)	81
Word Processor & Clerical Stations (Conventional Office)	60
Word Processor & Clerical Stations (Open Office)	56
Conference Room	22 per person
Reception & Waiting Room (1 - 15 Persons)	15 per person
Reception & Waiting Room (over 15 Persons)	10 per person

i Space standards indicated above include normal furniture and equipment. Additional space may be allowed for unusual furniture and equipment requirements if justified.

ii Enclosed offices should be a minimum of 100 NASF regardless of classification of occupant.

iii Allow an additional 7 NASF per file cabinet in open office areas.

CHAPTER IV
POLICIES and STANDARDS

5 BUILDING EFFICIENCY FACTORS (Facility Program Manual, DGS/DBM, latest edition)

Building Type	Efficiency Factor Range	Mid-Point
Office (Non-University)	1.35 (75%) - 1.50 (67%)	1.42 (70%)
Administration/Office (University)	1.67 (60%) - 1.82 (55%)	1.74 (57%)
Library	1.52 (66%) - 1.67 (60%)	1.60 (62%)
Classroom	1.65 (61%) - 1.85 (54%)	1.75 (57%)
Science (Undergraduate)	1.65 (61%) - 1.85 (54%)	1.75 (57%)
Science (Research)	1.72 (58%) - 1.92 (52%)	1.82 (55%)
Medical (Teaching)	1.75 (57%) - 1.95 (51%)	1.85 (54%)
Dormitory	1.33 (75%) - 1.54 (65%)	1.43 (70%)
Dining Hall (Kitchen)	1.40 (71%) - 1.60 (62%)	1.50 (67%)
Student Union	1.60 (62%) - 1.75 (57%)	1.67 (60%)
Performing Arts Fine Arts	1.75 (57%) - 1.95 (51%)	1.85 (54%)
Theater, Auditorium, Concert Hall	1.45 (69%) - 1.60 (62%)	1.52 (66%)
Gymnasium	1.40 (71%) - 1.50 (67%)	1.45 (69%)
Patient Health Facility	1.70 (59%) - 1.85 (54%)	1.77 (56%)
Armory	1.25 (80%) - 1.35 (75%)	1.30 (77%)
District Court, MSC	1.70 (59%) - 1.85 (54%)	1.77 (56%)
State Police Barrack	1.50 (67%) - 1.60 (62%)	1.55 (64%)
Detention Facility	1.70 (59%) - 1.85 (54%)	1.77 (56%)
Maintenance Shop	1.25 (80%) - 1.35 (75%)	1.30 (77%)
Garage (Vehicle Support)	1.15 (85%) - 1.25 (80%)	1.20 (83%)
Park Comfort Station, Shower Building	1.30 (77%) - 1.40 (71%)	1.35 (75%)
Visitor's Center Concession	1.40 (71%) - 1.50 (67%)	1.45 (69%)